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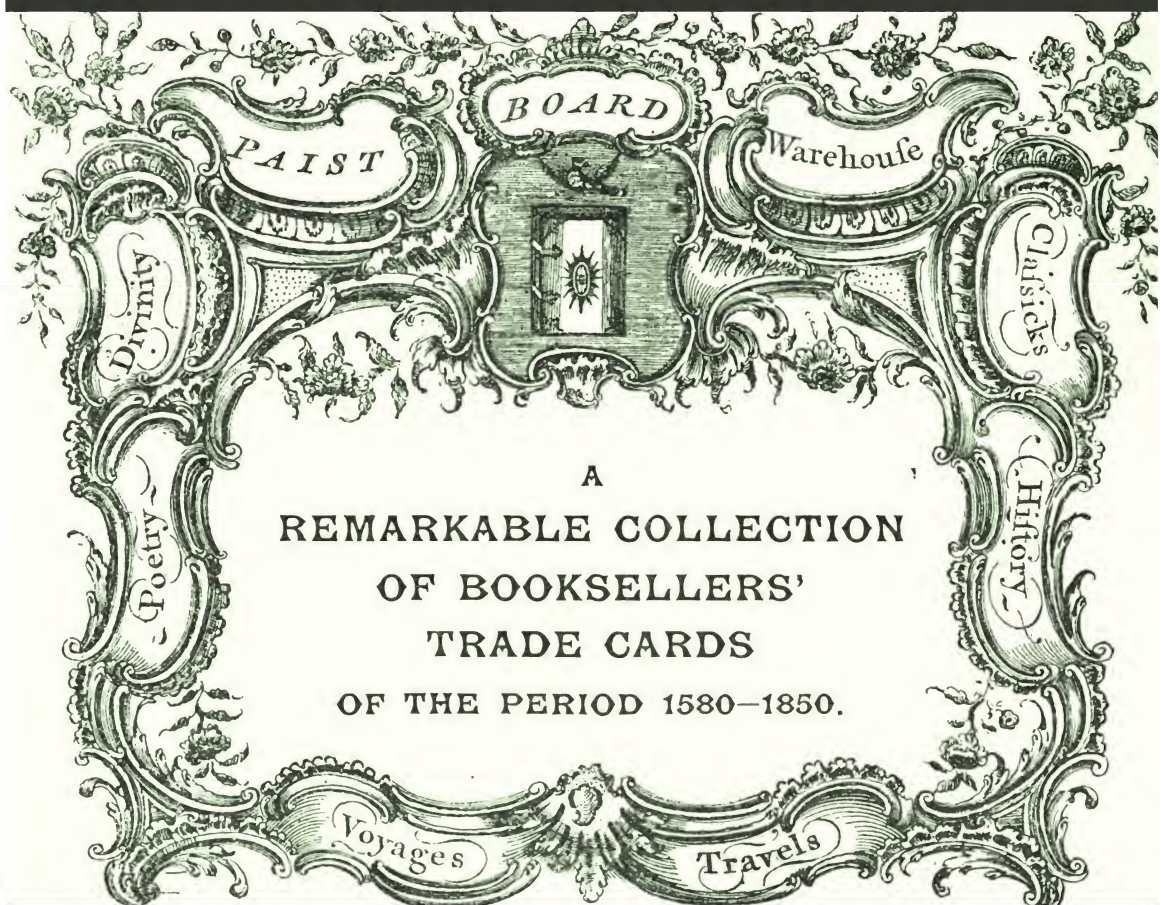
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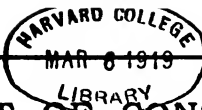
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- 276 ——— **EDITIO NOVA, recognita et Mendis expurgata**: SPECIMINA PHILOSOPHIÆ, seu Dissertatio de Methodo etc.; DIOPTRICE et METEORA: PASSIONES ANIMÆ; with numerous woodcuts, 3 vols. 4to. in 1, hf. morocco, with auto. of Samuel Jebb, M.D. (1694-1772), 7s 6d Amst., Dan. Elzevir, 1677
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- 324 — **LECTURES and COLLECTIONS. COMETA**, containing Observations of the Comet in April, 1677; Fragments of Lectures, 1664-5, **SIR CHR. WREN's Hypothesis and Geometrical Problem** about those Comets; a Discourse concerning the Comet of 1677; Mr. Boyle's Observations of two new Phosphori, etc. etc. **MICROSCOPIUM**, containing Mr. **LEEUWENHOECK's** two Letters concerning some late Microscopical Discoveries, the Author's Discourse and Description of Microscopes, P. Cherubine's Accusations answered, Mr. Young's Letter containing several Anatomical Observations, with 5 *folding copperplates* (pp. viii + 112): **LAMPAS**: or Descriptions of some Mechanical Improvements of Lamps and Waterpoises, with some other **PHYSICAL and MECHANICAL DISCOVERIES**, with 2 *folding copperplates* (pp. 54)—2 vols. sm. 4to. *contemporary calf* (FINE COPIES), with old armorial bookplate of Thomas Western, Clare Coll., Cantab. (VERY RARE), £2. 2s 1678-7
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Father Leurechon was a Lorrainer and Rector of the Jesuit College at Bar, and confessor to Charles IV. Duke of Lorraine. He died in 1670 aged eighty at Pont à Mousson, now at the mercy of the savages.

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- 376 — SCIENCE and METHOD, translated by FRANCIS MAITLAND, with Preface by the HON. BERTRAND RUSSELL, F.R.S., cr. 8vo. *cl.*, 4s (p. 6s nett) [1914]

It would be interesting to hear M. Poincaré's cousin on Mr. Bertrand Russell's disgusting sneer at the allies.

- 377 **POIRÉ** (Paul), Rémy et Edmond **PERRIER**, et Alexandre **JOANNIS**: NOUVEAU DICTIONNAIRE des SCIENCES et de leurs APPLICATIONS; *with 5402 illustrations*, 2 thick vols. roy. 8vo. (pp. 3362), *handsomely bound in hf. pigskin (backs worn)*, £1. 1s (p. F. 45 nett, sewn) s. d.

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ibidem, apud Horatium Salviannum, D.D. LXXXV VIII [recte 1589]

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- The original Spanish editions of the above work (which more generally occurs in French editions with the author's name Gallicised as *L'ortie*) are of extreme rarity, the earliest edition quoted by Antonio being that printed at Granada in 1563. The above edition was unknown alike to Brunet and Graesse, and Prof. de Morgan possessed only a French translation of which he mentions: 'This is perhaps the first book in French on commercial arithmetic. I have not found mention of it in any catalogue. It is a good Italian importation, through Spain; and must have made the readers of the Boethian school stare to see what arithmetic really could do.'
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'Oughtred also wrote a treatise on trigonometry published in 1657, in which abbreviations for *sine*, *cosine*, etc. were employed. This was really an important advance, but the works of Girard and Oughtred, in which they were used, were neglected and soon forgotten, and it was not until Euler reintroduced contractions for the trigonometrical functions that they were generally adopted.'—W. W. R. Ball.

——— v. LEURECHON, No. 353, ante.

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 'In the arithmetic Pacioli gives rules for the four simple processes, and a method for extracting square roots. He deals pretty fully with all questions connected with mercantile arithmetic, in which he works out numerous examples, and in particular discusses at great length bills of exchange and the theory of book-keeping by double entry. This part was then the first systematic exposition of algaristic arithmetic. . . . In the algebra he discusses in some detail simple and quadratic equations, and problems on numbers which lead to such equations. He mentions the Arabic classification of cubic equations, but adds that their solution appears to be as impossible as the quadrature of the circle. . . . Though much of the matter described is taken from Leonardo's Liber Abaci, yet the notation in which it is expressed is superior to that of Leonardo,' etc. etc. etc.—W. W. R. Bull.
 'In the mathematical writings of the monk Luca Pacioli symbols began to appear. They consisted merely in abbreviations of Italian words, such as *p* for *piu*, *m* for *meno*, *c* for *cosa* . . . '—Prof. Cajori.
 'Il y a dans ce grand recueil une méthode fort ingénieuse pour la résolution de plusieurs équations indéterminées du second ou du quatrième degré. . . . On y voit la résolution des équations dérivées du second degré, et celle de certaines équations exponentielles. Dans quelques problèmes relatifs à la règle des partis, le calcul des probabilités se montre pour la première fois. . . . Enfin on y trouve l'application de l'algèbre à la géométrie et une multitude de faits, relatifs à diverses branches de connaissances humaines et fort utiles aux personnes qui veulent étudier l'histoire des sciences. C'est, par exemple, dans un traité de commerce inséré dans cette *Somme*, que l'on trouve pour la première fois la tenue des livres en partie double,' etc. etc. etc.—G. Libri.
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III. MATHEMATICS, continued:—

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[col. :] Vitebergae, per Jos. Clug, 1534

AN EXCEEDINGLY RARE EDITION, unknown to Prof. de Morgan, Poggendorff, Brunet, or Graesse. The latter mentions however an edition of Wittenberg, 1536. It is of special interest as the first containing MELANCHTHON'S PREFACE. The last part, 'De Proportionibus ex Elementis Euclidis', is by JOHANN VOGELIN.

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The last edition of the first complete text-book of trigonometry. 'It contains the expressions for $(\sin A \pm B)$ and $\cos (A \pm B)$ in terms of the trigonometrical ratios of A and B .'—W. W. R. Ball.

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The work was written in 1813 while the author was a prisoner of war in Saratoff, with no other help than his memory.

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A standard work on the subject, containing Differential and Integral Calculus, Calculus of Variations, Applications to Algebra and Geometry, and Analytical Mechanics. Vols. 1 and 2 are out of print and scarce.

III. MATHEMATICS, *continued*.—

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Proclus's commentary is of great value for the history of Greek mathematics. The above is the first edition of the work of Proclus.
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Nothing is known of the author of the second work, who is not mentioned by Montucla or Poggendorff (who mistakenly attributes the work to Regiomontanus), or in other bibliographies. It forms an appendix to the first work, and is especially interesting for its numerous well-executed woodcuts, which include many on artillery bombarding fortresses, which are still based on the contemporary notion that the projectile travels in a straight line, and after its strength is spent, drops vertically.

Poggendorff mentions a Johannes Noviomagus (Jan Bronckhorst, 1494-1570—v. No. 514), who for some time professed mathematics at Rostock; but there is no evidence to connect him with the above Daniel Santbech Noviomagus.

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'Thomas Digges ranks among the first mathematicians of the XVI. Century. Although he made no great addition to science, yet his writings tended more to its cultivation than perhaps all those of other writers on the same subjects put together.'—J. O. Halliwell-Phillips.

IV. ASTRONOMY AND GEODESY, *continued* :—

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 'It was from Euler's results that Mayer constructed the lunar tables [q. v. post] for which his widow in 1770 received £5000. from Parliament ; and in recognition of Euler's services a sum of £300. was also voted as an honorarium to him.'—*W. W. R. Ball*.
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- 1442 — Sur l'ORIGINE du MONDE: Théories Cosmogoniques des Anciens et des Modernes, 2^e Édition, augmentée; with 38 woodcuts, 8vo. sewn, 3s 1885
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- 1445 — ATLAS CÆLESTIS, comprising 27 finely engraved double star-maps, atlas folio, old hf. calf (binding damaged), rare, £1. 5s 1781
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- 1446 — ACCOUNT of, compiled from his own MSS., and other authentic Documents, never before published, with his BRITISH CATALOGUE of STARS, corrected and enlarged, by FRANCIS BAILLY, F.R.S., with the rare Supplement, with diagrams—4to. boards, uncut (Suppl. sewn), with inscr. to Peter Barlow, F.R.S., and the latter's book-label, £2. 10s 1835-7
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- v. HORROCKS, *post*.
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- GEBER** ibn Aphla, astronomer at Seville, Sæc. MIII.: LIBRI IX de ASTRONOMIA, per GIRIARDU CREMONENSEM Latinitate donati (1532)—v. APIANUS, No. 433, ante.
- GEODÄTISCHES INSTITUT** (Königl. Preussisches): PUBLICATIONEN—v. No. 77.
- 1453 **GILBERT** (*Philippe, Univ. LOUVAIN*) Les PREUVES MÉCANIQUES de la ROTATION de la TERRE, roy. 8vo. (pp. 35), sewn (o. p.), 3s 1883
- 1454 **GORE** (*James Howard*) BIBLIOGRAPHY of GEODESY, 4to. cl., 5s Washington, 1889
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- 1464 ———, and **Jacobus Cornelius KAPTEYN**; *Univ. Groningen: The CAPE PHOTOGRAPHIC DURCHMUSTERUNG for the Equinox 1875, with plates and woodcuts, 3 thick vols. hf. calf, with the Revision, with diagrams, 3 parts in 1 vol. cl.—in all 4 vols. roy. 4to., £2. (p. £5. 5s)* 1896—Edin., 1903
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- v. **CORDOBA OBSERVATORY, No. 49.**

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- 1468 **GRANT** (Robert; *Prof. Astronomy, Glasgow*) CATALOGUE of 6,415 STARS, for the EPOCH 1870, deduced from Observations at GLASGOW UNIVERSITY OBSERVATORY, 1860-81, with Synopsis of the Annual Results of each Star arranged in the Order of Right Ascension, thick roy. 4to. cl., 14s (p. £1. 11s 6d) *Glasgow, 1883*
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- 1470 ——— ANOTHER COPY, cl., *with auto. and sheet of notes by Lord Justice Stirling, F.R.S., 9s*
- 1471 ——— ANOTHER COPY, cl., *with author's inscr. to Dr. Allen Thomson, F.R.S., 9s*
Still one of the best histories on the subject. Its merits were acknowledged by the Royal Astronomical Society by awarding the author its gold medal.
- GREENWICH OBSERVATIONS**—v. No. 89.
- 1472 **GREGORY** (David; F.R.S.) ASTRONOMIÆ PHYSICÆ et GEOMETRICÆ ELEMENTA, editio princeps; *with diagrams, folio, contemporary panelled calf, or, old hf. morocco, 15s* *Oxoniz, 1702*
- FIRST EDITION. It was the first textbook composed on gravitational principles, and remodelling astronomy in conformity with physical theory. Newton thought highly of it, and communicated for insertion in it (p. 382) his 'lunar theory', long the guide of practical astronomers in determining the moon's motions. The discussion in the preface, in which the doctrine of gravitation was brought into credit on the score of its antiquity, likewise emanated from Newton.—*D. N. B.*
- 1473 **HAGEN** (Johann Georg, S.J., *Director, Specola Vaticana*) ATLAS STELLARUM VARIABILUM: 311 star-maps (12 x 10 inches) printed on fine cardboards, with Catalogues, giving Lists of Comparison Stars, with their Magnitudes, 6 parts 4to. in portfolios, £2. 15s (p. M. 350) *Berolini, 1899-1908*
- 'Marking an epoch in the history of variable star work. The charts will bear the same relation to variable stars that the Durchmusterung charts bore to the astronomy of a generation ago.'—*Prof. J. A. Parkhurst.*
- 1474 **HALE** (Georg Ellery, *Director, Mt. Wilson Solar Observatory*) THE STUDY of STELLAR EVOLUTION: an Account of some recent Methods of Astrophysical Research, *with 104 fine plates of star photographs, astronomical instruments, etc., and views, 8vo. cl. (fresh copy), 12s (p. 16s 6d nett)* *Chicago, 1908*
- 'Describing a connected series of investigations, laying special stress on the observational methods employed, in the hope of explaining clearly how the problem of stellar evolution is studied.'—*Preface.*
- 1475 **HALLEY** (Edmund; F.R.S., *Astronomer Royal*) CATALOGUS STELLARUM AUSTRALIUM, sive SUPPLEMENTUM CATALOGI TYCHONICI, exhibens Longitudines et Latitudines Stellarum Fixarum quae, prope POLUM ANTARCTICUM sitæ, in Horizonte Uraniburgico Tychoni inconspiciæ fuere, accurato Calculo ex Distantiis supputatas, et ad Annum 1677 completum correctas, cum ipsis OBSERVATIONIBUS in INSULA S. HELENÆ . . . accedit Appendicula de Rebus quibusdam Astronomicis, sm. 4to. cl. (VERY RARE), £1. 8s 6d *Londini, 1679*
- 1476 ——— ANOTHER COPY, *contemporary calf, newly rebacked, £1. 10s*
Very important as the FIRST STAR CATALOGUE of the SOUTHERN HEMISPHERE, comprising 341 stars observed at St. Helena, reduced to 1677.
'His enterprise laid the foundation of austral stellar astronomy, and earned for him from Flamsteed the title of the 'Southern Tycho.' In the course of the voyage he improved the sextant, collected a number of valuable facts relative to the ocean and atmosphere, noted the equatorial retardation of the pendulum, and made at St. Helena, on 7 Nov. 1677, the first complete observation of a transit of Mercury.'—*Miss Agnes M. Clerke.*
An account of the latter is included in the 'appendicula', which also contains the first suggestion of ascertaining the solar parallax by the transits of Venus.
- 1477 ——— TABULÆ ASTRONOMICÆ, accedunt de Usu Tabularum Præcepta; *with fine engraved portrait, 4to. large copy in old calf gilt (joints mended); rare, 12s* *ibidem, 1749*
- FIRST EDITION of the *Tabulæ*, containing his discovery of the 'long inequality' of Jupiter and Saturn, and including 'Stellarum Annuas Aberrationes supputandi Methodus', 'Tabula Logarithmorum Logisticorum', and 'Lunæ Meridianæ Ascensionis Rectæ', as well as a reprint of his celebrated 'Synopsis Astronomiæ Cometice', in which he identified the comets of 1531, 1607, and 1682 (Halley's Comet) as one and the same, and laid the foundation of modern cometary astronomy.
- v. MISCELLANEA CURIOSA (METEOROLOGY), *post.*
- 1478 **HANSEN** (Petter Andreas) FUNDAMENTA NOVA INVESTIGATIONIS ORBITÆ VERÆ, quam LUNA perlustrat, cum Solutione Problematis IV Corporum, 4to. sewn, or, boards, 10s *Gothæ, 1838*
Containing the author's important researches on lunar perturbations.
- v. SCIENTIFIC MEMOIRS, No. 394.
- 1479 **HARKNESS** (Rear-Adml. William, U.S.N.) THE SOLAR PARALLAX, and its related CONSTANTS, including the FIGURE and DENSITY of the EARTH, large 4to. cl., 6s 6d *Washington, 1891*
'Surveying from an eclectic point of view the general situation of the sun's parallax. Convinced that no single method deserved an exclusive preference, he reached a plausible result through the combination, on the principle of least squares, of all the various quantities on which the great datum depends. It thus summed up and harmonised the whole of the multifarious evidence bearing on the point.'—*Miss Agnes M. Clerke.*
- 1480 **HECKER** (Oskar; *Univ. Strasbourg*) BESTIMMUNG der SCHWERKRAFT auf dem INDISCHEN und GROSZEN OZEAN und an deren KÜSTEN, sowie erdmagnetische Messungen; *with 12 plates, 4to. sewn, 7s 6d (p. M. 15 nett)* *Berlin, 1908*
- 1481 **HERPIN** (A.) DICTIONNAIRE ASTRONOMIQUE, ou Exposé, par Ordre alphabétique, des Principes fondamentaux et des Lois générales de la Mécanique Universelle, avec leurs diverses Applications aux Calculs des Phénomènes qui se produisent dans le Domaine du Monde physique; *with 7 folding plates (linen-mounted), large 8vo. hf. black morocco neat, cl. sides (as good as new), 6s (p. F. 12 nett sewn)* 1875

IV. ASTRONOMY AND GEODESY, *continued*:—

- 1483 **HERSCHEL** (Sir Frederick William, F.R.S.) CATALOGUE OF STARS, taken from FLAMSTEED'S Observations, contained in the 2nd Volume of the *Historia Cœlestis*, and not inserted in the British Catalogue, with Index, to point out every Observation in it belonging to the Stars of the British Catalogue, and Collection of Errata, by CAROLINE HERSCHEL, roy. folio, *hf. calf*, 12s 6d 1798

Published at the expense of the Royal Society.

- 1484 **HERSCHEL** (Sir John Frederick William, F.R.S.; son of the above) OUTLINES OF ASTRONOMY; 11th [LAST] EDITION, with 9 plates, woodcuts, and diagrams, sq. 8vo. cl., 6s (p. 12s) 1871

¹ Perhaps the most completely satisfactory general exposition of a science ever penned.—*Miss Agnes M. Clerke*.

- 1485 —, and Sir James SOUTH, F.R.S.: OBSERVATIONS of the APPARENT DISTANCES and POSITIONS of 380 DOUBLE and TRIPLE STARS made in 1821-3, and compared with those of other Astronomers, with Account of such Changes as appear to have taken Place in them since their Discovery; also Description of a 5-Foot Equatorial Instrument employed in the Observations, with 4 fine copperplates by BASIRE of *Astronomical Instruments*, etc., roy. 4to. (pp. 424), *sewn, uncut (scarce)*, 12s 6d 1825

This valuable star-catalogue was awarded the Astronomical Society's gold medal, and the Lalande prize for astronomy.

- 1486 **HEVELIUS** [*Germanice HEWELCKE*] (Johann; F.R.S.) SELENOGRAPHIA: sive LUNÆ DESCRIPTIO; atque accurata, tam Macularum ejus, quam Motuum Diversorum, aliorumque omnium Vicissitudinum, Phasiumque, TELESCOPII Ope deprehensarum, Delineatio; in quā simul cæterorum omnium Planetarum nativa Facies . . . addita est, Lentex Expoliendi Nova Ratio, etc. etc.; with engraved title, beautiful portrait by J. Falck, and very numerous other fine copperplates, folio, contemporary calf gilt (one joint cracked, and portrait slightly water-stained, otherwise a FINE AND TALL COPY); RARE, with auto. of Samuel Roberts, F.R.S., £2. 2s Gedani [Danzig], 1647

¹ The earliest great work on the geography of the moon and the aspects of the planets.—*Prof. Simon Newcomb*.

It also contains his discovery of the libration of the moon in longitude, and is a work still in use.

The first two chapters (pp. 1-31) contain a valuable account of the astronomical telescope and its manufacture.

² With Hevelius selenography may be considered to originate. He was the first to construct a satisfactory lunar map; the principal formations on it he designated by names derived from their supposed terrestrial analogies, the whole number so distinguished amounting to nearly 250. This map, though all the positions were laid down by estimation, is, considering the optical means at his disposal at this period, very accurate, and it remained for over 100 years the best map of the surface of the moon.—*E. Nelson*.

- 1487 **HILL** (Thomas) The SCHOOLS of SKIL, containing two Bookes: The first, of the SPHERE, of heaven, of the Starres, and their Orbes, and of the Earth, etc. The second, of the SPHERICALL ELEMENTS, of the celestial Circles, and of their vses, etc. Orderly set forth according to ART, with apt Figures and proportions in their proper places [with Preface by W. JAGGARD]; black letter; with numerous woodcuts and diagrams, sm. 4to. contemporary English calf, newly rebacked (some ll. browned, and others with scribbling on margin by a contemporary hand, otherwise a VERY SOUND AND LARGE COPY); very rare, £6. 6s T. Judson for W. Jaggard, 1599

The only edition ever published of one of the earliest English works on astronomy—based of course still on the Ptolemaic System. It describes i.e. 'an instrument, by which the roundness of the Earth (according to latitude) may be proved, and all those may easily be shewed which are taught of the dayes Artificiall.' The author was also the compiler of a well-known book 'The Profitable Arte of Gardening', which was often reprinted during the Sixteenth Century.

A copy of the above work, in a modern binding and having several leaves mended, fetched £5. 10s at auction in 1912. No other copy can be traced as having been sold at auction during the last 80 years.

- 1488 **HOBROCKS** (Jeremiah; Curate of Hoole, Lancs.; first observer of the Transit of Venus): JEREMIE HORROCCII, Liverpoliensis Angli, OPERA POSTHUMA; accedunt GUIL. CRABTREE, Mancæstriensis, Observations Cœlestes; JOH. FLAMSTEDII de Temporib. Aëquatione Diatriba; Numeri ad Lunæ Theoriam Horroccianam; JOH. WALLISII de Cometarum Distantiis; de Rationum et Fractionum Reductione; de Periodo Juliana; with 3 folding tables and diagrams, thick sm. 4to. fresh and sound copy in contemporary calf (VERY RARE), £2. 5s Londini, 1678

- 1489 — ANOTHER COPY, sm. 4to. old panelled calf (FINE COPY), with armorial bookplate of the 2nd Earl of Marchmont, £2. 10s

Horrocks's short life is one of the most shining illustrations in the whole romance of science. He observed for the first time, with a little half-crown telescope, on a Sunday afternoon, Nov. 24, 1699 (O. S.), a transit of Venus, having first finished saying his Evensong, 'ad majora avocatus quæ ob hæc parægra [astronomica] negligi non deuit.' He died next year, 1640, in his 23rd year.

¹ In the lunar theory he effected an improvement which would alone suffice to obtain for him an imperishable reputation. His beautiful explanation of the inequality in the moon's longitude, termed the evection, by means of a laboratory motion of the apses and a variable eccentricity, was the last great step made in the development of the laws of planetary movement previous to the establishment of the theory of gravitation by Newton.—*Prof. R. Grant*.

- 1490 **HOUEZAU** (Jean Charles; Directeur de l'Observatoire de Bruxelles), et Albert LANCASTER, Bibliothécaire de cet Etablissement: BIBLIOGRAPHIE GÉNÉRALE de l'ASTRONOMIE, ou Catalogue méthodique des Ouvrages, des Mémoires, et des Observations astronomiques publiés depuis l'Origine de l'Imprimerie jusqu'en 1880; with chart, 2 very thick vols. impl. 8vo. *hf. green morocco gilt, cl. sides, uncut, t. e. g.* (FINE COPY), WITH AUTHOR'S INSCRIPTION as below, £7. 15s

Bruxelles, 1887-9-2

¹ A. Monsieur Jenatzky, Chef de division au Ministère de l'Agriculture, hommage des auteurs. J. C. HOUEZAU. A. LANCASTER.—*Inscr. on title of v. I, 1.*

- 1491 — TOME I^{er}, 1^{re} PARTIE (Ouvrages Historiques, Astrologie), et TOME Ind (Mémoires); with chart, 2 vols. impl. 8vo. in 3, *hf. calf gilt*, £5. 15s *ibidem*, 1882-7

The most important bibliography on the subject, the second volume of which is now out of print and excessively scarce. It contains in Vol. I, 1, an interesting Introduction on the History of Astronomy by M. Houzeau (pp. 810), and a Bibliography of Astrology; in Vol. I, 2: Biographies et commerce épistolaire; ouvrages didactiques et généraux; Astronomie sphérique; Astronomie théorique; in Vol. II: Mémoires et Notices insérés dans les Collections académiques et les Revues.

A proposed third part of vol. I, and vol. III, have never been published.

Pp. 1272-1310 of vol. I contain probably the best bibliography of books and old MSS. on dialling.

IV. ASTRONOMY AND GEODESY, *continued* :—

- 1493 **HOOKER** (Robert, F.R.S.) ATTEMPT to PROVE the MOTION of the EARTH from Observations, sm. 4to. (pp. 36), *sewn* (RARE), £1. 1s
J. Martyn, 1674
‘Observing γ Draconis from July to October with a 36-foot telescope pointed through an aperture in the roof of Gresham College, he perceived displacements intimating (as he thought) a parallax of 25" to 30". His illusory result led to Bradley's discovery of aberration. These experiments formed the subject of Hooke's Cutlerian lectures in 1670, published in 1674 as *An Attempt to prove the Motion of the Earth*.’—*D. N. B.*
- 1494 **HUGGINS** (Sir William, P.R.S.) On the RESULTS of SPECTRUM ANALYSIS applied to HEAVENLY BODIES: a Discourse before the British Association, at Nottingham, Aug. 24, 1866, with Appendix, with 18 *photographs*, cr. 8vo. cl. (*scarce*), 6s 6d
[1866]
One of the author's earliest accounts of his great astro-spectroscopic investigations, and of his discovery by spectrum analysis of the gaseous contents of nebulae.
— v. WATTS (W. M.): PHYSICS, *post*.
- 1495 **IDELER** (Christian Ludwig; *Prof. Astronomy, Berlin*) HANDBUCH der MATHEMATISCHEN und TECHNISCHEN CHRONOLOGIE, aus den Quellen bearbeitet, 2 thick vols. post 8vo. *hf. calf* (SCARCE), £1. 7s 6d
Berlin, 1825-6
THE SCARCE ORIGINAL EDITION of the author's most important work. ‘An exhaustive and commendable work on the measures of time adopted in various countries, especially in ancient times.’—*Prof. Simon Newcomb.*
- 1496 ——— LEHRBUCH der CHRONOLOGIE, post 8vo. *hf. calf*, 7s 6d
ibidem, 1831
Containing the matter of the foregoing work in a more condensed form.
- INTERNATIONALE ERDMESSUNG** : PUBLICATIONEN—v. No. 72.
- 1497 **KEPLER** (Johann) HARMONICES MUNDI Libri V, quorum I. Geometricus, II. Architectonicus, III. Harmonicus, IV. Metaphysicus, Psychologicus et Astrologicus, V. Astronomicus et Metaphysicus, Appendix habet Comparationem huius Operis cum Harmonicis CL. PTOLEMÆI Libro III. cumque ROBERTI DE FLUCTIBUS [ROBERT FLUDD, M.D.] Speculationibus Harmonicis, etc., editio princeps; with plates, woodcuts, and diagrams, sm. folio, *contemporary vellum* (back of binding slightly damaged and browned as usual, otherwise A SOUND AND TALL COPY); VERY RARE, £3. 3s
Linzi Austria, 1619
- 1498 ——— ANOTHER COPY, *old limp vellum* (blank corner of title and last l. defective, and corner of a number of ll. water-stained, otherwise an unusually clean and tall copy), £2. 15s
ORIGINAL EDITION of Kepler's second great work (‘his chief work’—*W. W. R. Ball*), containing for the first time his ‘third law’: The square of a planet's periodic time is proportional to the cube of its mean distance from the sun. As is well known, his three laws formed the groundwork of Newton's discoveries, and are the starting point of modern astronomy.
It is dedicated to James I. The passage ‘fidei defensor inter Christi fideles’ is inked in the second copy.
- 1499 **KIPPAX** (John R.) THE CALL of the STARS: a popular Introduction to a Knowledge of the Starry Skies, with 43 plates, large 8vo. cl., *uncut*, t. e. g., 6s 6d (p. 10s 6d nett) *New York, 1914*
- 1500 **KLEIN** (Hermann Josef, Ritter des kgl. Serb. San-Sava Ordens) ASTRONOMISCHE ABENDE: allgemein verständliche Unterhaltungen über Geschichte und Ergebnisse der Himmelserscheinungen, 5. völlig umgearbeitete Auflage; with 13 plates, large crown 8vo. *handsomely bound in hf. black morocco, cl. sides, uncut*, t. e. g., 3s 6d (p. M. 5.50 *sewn*)
Leipzig, 1905
- 1501 ——— FÜHRER am STERNENHIMMEL, für Freunde astronomischer Beobachtungen; with 7 plates (some coloured), and numerous woodcuts, post 8vo. *hf. black calf neat, cl. sides*, 3s 6d (p. M. 8 *sewn*)
ibidem [1892]
The author here announces himself as a Knight of the Royal Serbian Order of St. Sava, in the days before his country had set out for the game of nation-murder.
- 1502 ——— HANDBUCH der ALLGEMEINEN HIMMELSBESCHREIBUNG nach dem Standpunkte der astronomischen Wissenschaft am Schlusse des 19. Jahrhunderts, 3. [neueste] völlig umgearbeitete Auflage; with 10 plates (one coloured), and numerous woodcuts, 8vo. *original hf. morocco gilt, r. e. (nice copy)*, 6s 6d (p. M. 12.50)
Braunschweig, 1901
- 1503 ——— STAR ATLAS, containing the Stars from 1 to 6.5 Magnitude between the North Pole and 34° S. Declination, and of all Nebulae and Star Clusters in the same Region visible by Telescopes of moderate Power, with TEXT, translated and adapted for English Readers by EDMUND MCCLURE, pr., M.R.I.A., 18 maps, roy. 4to. cl., 4s
1888
- 1504 **KLINKERFUES** (Ernst Friedrich Wilhelm, *Prof. Astronomy, Göttingen*) THEORETISCHE ASTRONOMIE, 2. neubearbeitete und vermehrte Auflage von H. BUCHHOLZ; with *bad portrait and 67 diagrams*, thick 4to. *sewn*, 16s (p. M. 34)
Braunschweig, 1899
- 1505 ——— ANOTHER COPY, *hf. roan*, 17s 6d
Including a valuable collection of Tables (pp. 829-928) as Appendix.
- 1506 ——— DRITE [NEUESTE] VERBESSERTTE UND VERMEHRTTE AUFLAGE. Neubearbeitung von H. BUCHHOLZ; with 67 illustrations, thick 4to. cl., £1. 15s (p. M. 50)
ibidem, 1912
- 1507 **KRISCH** (August) ASTRONOMISCHES LEXIKON, auf Grundlage der neuesten Forschungen, besonders der Ergebnisse der Spectralanalyse und der Himmelsphotographie zusammengestellt und bearbeitet; with 327 illustrations, roy. 8vo. *original hf. morocco (rubbed)*, 6s (p. M. 12.50)
Wien [1902]
- 1508 **KUGLER** (Franz Xaver, S.J.) Die BABYLONISCHE MONDRECHNUNG: zwei Systeme der Chaldäer über den Lauf des Mondes und der Sonne, auf Grund mehrerer von J. N. STRASSMAIER, S.J., copirten Keilinschriften des Britischen Museums, mit Anhang über chaldäische Planetentafeln; with 13 plates of inscriptions, impl. 8vo. *sewn*, 15s (p. M. 24)
Freiburg i. B., 1900
- 1509 **KÜHNEN** (Fr.), und Philipp FURTWÄNGLER: BESTIMMUNG der ABSOLUTEN GRÖSZE der SCHWERKRAFT zu POTSDAM, mit REVERSIONSPENDELN; with 4 plates, 4to. *sewn*, 10s 6d
nicht im Handel, Berlin, 1906
- 1510 **LIAIS** (Emmanuel, *Observatoire Impérial de Paris*) TRAITÉ d'ASTRONOMIE appliquée à la GÉOGRAPHIE et à la NAVIGATION, suivi de la GÉODÉSIE PRATIQUE; with 59 illustrations, 8vo. *hf. black morocco neat, cl. sides, t. e. g. (as good as new)*, 4s 6d
1867

IV. ASTRONOMY AND GEODESY, *continued*:—

- 1512 **L. A. CONDOMINE** (Charles Marie de) JOURNAL DU VOYAGE fait par Ordre du Roi à l'ÉQUATEUR, servant d'Introduction historique à la MESURE des trois premiers Degrés du MÉRIDIEU; *with fine plates and maps (chiefly folding)*, '51; avec les 2 Suppléments, '52-4—3 vols. 4to. in 2, *old calf gilt, newly rebaked* (FINE COPY); RARE, £1. 1s *Imprimerie Royale, 1751-4*
The supplements also contain the author's reply to Bouguer, who attacked him shortly after their return to France.
- 1513 ——— MESURE des TROIS PREMIERS DEGRÉS du MÉRIDIEU dans l'HÉMISPHERE AUSTRAL; *with 3 folding plates, and vignette*, 4to. *old calf gilt, newly rebaked* (fine copy); rare, 12s 6d

apud eandem, 1751

These two works form the account of the author's geodetic mission to Peru, in conjunction with Bouguer, Juan, and Ulloa, for measuring the meridian near the equator, in co-operation with another mission sent to Lapland and led by Maupertuis, Clairaut, and Celsius, to measure the meridian near the North Pole. The result of these two missions first established the correctness of Newton's views of the earth having the shape of an ellipsoid—a fact previously much doubted as the result of a faulty meridian-measurement by Cassini and Picard.

'This is the account of the scientific operations, divided into 2 parts. The first relates to the geodetical measurements, and the second to the astronomical observations. Pp. 239-58 contain an important discussion of Picard's operations'.—*Isaac Todhunter.*

- 1514 **LALANDE** (Joseph Jérôme Le François de; *de l'Institut, F.R.S.*), CATALOGUE of those STARS in the HISTOIRE CÉLESTE FRANÇAISE of, for which Tables of Reduction to the Epoch 1800 have been published by PROF. SCHUMACHER, reduced at the Expense of the British Association of Science, under the Superintendence of FRANCIS BAILY, F.R.S., thick 8vo. (pp. 1218), boards, uncut (SCARCE), £1. 5s

1847

Lalande's *Histoire Céléste*, which was first published in 1801, gives the places of 47,890 stars, but 'in the rough, as it were, and consequently needing laborious processes of calculation to render them available for exact purposes.' To obviate these defects, its reduction was undertaken by the British Association in 1837-8 at the instance of Baily, and published in a form 'which first rendered the work practically available' (*Miss Agnes M. Clerke*).

- 1515 **LAMBERT** (Johann Heinrich) INSIGNIORES ORBITÆ COMETARUM PROPRIETATES; editio princeps; *with 2 plates*, sm. 8vo. *old hf. roan* (rare), 12s

Augustae Vindellicorum, 1761

Containing the author's celebrated theorem on the movement of comets for the area of a focal sector of a conic in terms of the chord and the bounding radii: 'la plus belle et la plus importante découverte de la théorie des comètes' (*Lagrange*).

- 1516 ——— ANOTHER COPY, also: COSMOLOGISCHE BRIEFE über die EINRICHTUNG des WELTBAUES—2 vols. sm. 8vo. in 1, *old hf. calf gilt* (fine copy), *with bookplate of Charles 3rd Earl Stanhope*, F.R.S., £1. 1s

ibidem, 1761

FIRST EDITIONS OF BOTH WORKS. The second work 'laid the foundation of what may properly be called a science of the stars' (*Miss Agnes M. Clerke*).

- 1517 **LAPLACE** (Pierre Simon Marquis de) TRAITÉ de MÉCANIQUE CÉLESTE [avec les 4 Suppléments], première édition, 5 vols. 4to. *old hf. calf*, uncut (some joints cracked); RARE, £2. 2s

An VII [1798]—1825

- 1518 ——— ANOTHER COPY, 5 vols. *old calf gilt* (binding not uniform), £2. 5s

- 1519 ——— ANOTHER COPY, with SUPPLÉMENTS to Vols. III and V; also: THÉORIE de l'ACTION CAPILLAIRE, avec SUPPLÉMENT, 2 vols., '06-7—in all 7 vols. 4to. in 5, *contemporary calf*, £2. 10s
'Selon M. A. Maury des fautes graves se sont glissées dans l'impression de la nouvelle édition, et laissent ainsi à la première toute sa rareté et tout son prix.'—*Biogr. Gén.*

- 1520 ——— QUATRIÈME ÉDITION, réimprimée d'après l'Édition princeps de 1798-1825, sous les Auspices de l'ACADÉMIE des SCIENCES; *with finely engraved portrait*, 5 vols. 4to. *hf. cl.*, £2. 15s (p. F. 100. nett unbound)

1878

—v. No. 349.

- 1521 ——— MÉCANIQUE CÉLESTE, translated, with COMMENTARY, by NATHANIEL BOWDITCH, F.R.S., with MEMOIR of the TRANSLATOR (pp. 168), by NATHANIEL INGERSOLL BOWDITCH, *with fine portraits of the Author, Translator, and his Wife, and diagrams*, 4 thick vols. roy. 4to. *hf. morocco gilt* (very rare), £18. 18s *Boston [Mass.]*, 1829-39

This is the only English translation of Laplace's *chef-d'œuvre*, and is now very rare, very few of the 250 copies printed ever happening for sale; it is moreover noteworthy as the first great scientific work issued in the United States.

'An exact and careful translation into very good English, exceedingly well printed, and accompanied with notes appended to each page, which leave no step in the text of moment unsupplied, and hardly any material difficulty either of conception or reasoning unelucidated.'—*Sir John Herschel* (*Quarterly Review*).

'Il existe plusieurs traductions des œuvres de Laplace en diverses langues. L'une des plus estimées est la version anglaise de la Mécanique céleste par Bowditch.'—*E. Mervieux.*

- 1522 ———: [YOUNG (Thomas, M.D., F.R.S.; discoverer of the principle of interference)] ELEMENTARY ILLUSTRATIONS of the CELESTIAL MECHANICS of LAPLACE, PART I (all published), comprehending the FIRST BOOK, *with numerous diagrams*, 8vo. boards, uncut, 5s

1821

Including original contributions on the motion and cohesion of fluids, and on 'interpolation and extermination.'

- 1523 **LEBON** (Ernest) HISTOIRE ABRÉGÉE de l'ASTRONOMIE; *with 16 phototype portraits*, large cr. 8vo. sewn, 4s (p. F. 8 nett)

1899

This work was awarded a prize by the French Academy.

LICK OBSERVATORY—v. Nos. 114-18.

LIVERPOOL ASTRONOMICAL SOCIETY—v. No. 119.

- 1524 **LOWELL** (Percival, Director, Lowell Observatory, Flagstaff, Ariz.) THE EVOLUTION of WORLDS, *with 12 plates and 56 text-illustrations*, sq. 8vo. cl., uncut, t. e. g., 7s (p. 10s 6d nett) *New York*, 1909

- 1525 ——— MARS, *with 24 plates, and 3 smaller illustrations*, 8vo. cl. (a number of ll. and plates loose) 6s (p. 12s 6d)

1856

- 1526 ——— SECOND EDITION, *with 26 plates, and 3 other illustrations*, 8vo. cl., uncut, t. e. g. (o. p.), 7s 6d

1896

- 1527 ——— MARS as the ABODE of LIFE, *with 8 plates and numerous text-illustrations*, 8vo. cl., uncut, t. e. g., 6s 6d. (p. 10s 6d nett) *New York*, 1903

IV. ASTRONOMY AND GEODESY, *continued* :—

- 1528 **LOCKYER** (Sir Joseph Norman, F.R.S.) *The CHEMISTRY of the SUN, with 134 illustrations*, 8vo. *cl.* (o. p.), 7s (p. 14s) 1887
This work develops the author's theory of sun-spots, first communicated to the Royal Society in 1886.
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- 1585 **PRZYBYLLOK** (E.) MIKROMETRISCHE MESSUNGEN von DOPPELSTERNEN, roy. 4to. (pp. 91), sewn, 5s (p. M. 10)
Karlsruhe, 1908

- 1586 **PUISSANT** (Colonel Louis, de l'Institut) TRAITÉ de GÉODÉSIE, ou Exposition des Méthodes Trigonométriques et Astronomiques applicables à la Mesure de la Terre, et à la Construction du Canavas des Cartes Topographiques, troisième [et dernière] Edition; with 14 fine folding plates on copper, chiefly of Geodetic Instruments, 2 vols. 4to. mottled calf gilt (FINE COPY); SCARCE, £2. 12s 6d
 1842

'Puisant avait une prédilection toute particulière pour la géodésie, dont on peut dire qu'il fut pendant un demi-siècle le représentant le plus éminent.'—*Biogr. Gén.* He was the first to point out the errors in Delambre and Méchain's *Base du Système métrique décimal*.**RADCLIFFE OBSERVATORY**—v. No. 187.

IV. ASTRONOMY AND GEODESY, *continued* :—

- 1588 **PTOLEMÆUS (Claudius)** [ALMAGESTUM]: MAGNÆ CONSTRUCTIONIS Liber I., cum THEONIS Alexandrini Commentariis, JO. BAPT. PORTA Interprete; with numerous diagrams, sm. 4to. old Italian vellum (somewhat browned, but a SOUND COPY); RARE, £1. 1s Neapoli, Fel. Stelliola, 1605
This work embodies the geocentric system of astronomy known as the Ptolemaic, and formed the great authority on astronomy down to Copernicus.
- 1589 — **ΜΑΘΗΜΑΤΙΚΗ ΕΥΝΤΑΞΙΣ**. COMPOSITION MATHÉMATIQUE, traduite pour la première fois du grec en français, sur les MSS. originaux de la Bibliothèque Impériale de Paris, par l'ABBÉ NICOLAS B. HALMA, et suivie des NOTES de JEAN BAPTISTE JOSEPH DELAMBRE; with frontispiece and diagrams, thick roy. 4to. sewn, uncut (SCARCE), £1. 10s 1813
The best edition of the *Almagest*, and at the same time the only French translation of the work ever published. It has the Greek original on opposite pages. Only 400 copies were issued, and the work has become scarce.
The above copy contains at end 48 pp. of Notes, which are often missing.
- 1590 — **LIBER de ANALEMMATE**, a FREDERICO COMMANDINO instauratus, et Commentariis illustratus, qui nunc primum in Lucem prodit. Ejusdem FRED. COMMANDINI Liber de HOROLOGIORUM DESCRIPTIONE; with anchor on title, and numerous diagrams, cr. 4to. large and fine copy in old Italian vellum (RARE), 17s 6d *Romae, Paulus Manutius Aldi F.*, 1562
The only edition ever published.
- 1591 **RANYARD (Arthur Cowper, F.R.A.S.)** OBSERVATIONS made during TOTAL SOLAR ECLIPSES collated, with 18 plates, and numerous woodcuts, thick 4to. boards, 17s 6d (p. £2. 2s nett) 1879
The celebrated 'ECLIPSE VOLUME' of the Royal Astronomical Society's Memoirs (vol. XLI).
'His most extensive work in astronomy was the eclipse volume of the R. A. S. (Memoirs, vol. XLI), in which are systematised and discussed the observations of all solar eclipses down to 1878. It was originally begun in conjunction with Sir George Airy, but soon devolved on Ranyard alone.'—*D. N. B.*
'In his splendid volume on eclipses, with which the systematic study of coronal structure may be said to have begun, Mr. Ranyard first generalised the syndynal peculiarity by a comparison of records. He further pointed out the curved and branching shapes assumed by the component filaments of massive bundles of rays.'—*Miss Agnes M. Clerke.*
- 1592 **RESAL (Amé Henri, de l'Institut)** TRAITÉ ÉLÉMENTAIRE de MÉCANIQUE CÉLESTE; with folding plate, 8vo. sewn, with auto. of Lord Justice Stirling, F.R.S., 3s 1865
- 1593 — **ANOTHER COPY**, hf. French morocco neat, 4s
- 1594 — **DEUXIÈME [DERNIÈRE] ÉDITION** [entièrement refondue]; with 26 diagrams, 4to. sewn, 12s 6d (p. F. 27.50 nett) 1884
- 1595 — **ANOTHER COPY**, hf. dark green morocco neat, cl. sides (fine copy), 16s
'Among valuable text-books on mathematical astronomy ranks *Traité de Mécanique Céleste* of H. Resal.'—*Prof. Cajori.*
- RHETICUS (Georgius Joachimus)**—v. COPERNICUS, ante.
- 1596 **BICCIOLI (Giovanni Battista, S.J.)** ASTRONOMIA REFORMATA; with arms of Ferdinand Duke of Bavaria on title, 2 etched lunar maps, woodcuts, and numerous diagrams, 2 vols. roy. folio in 1, old vellum (RARE), £1. 15s *Bononie, 1665*
This work forms the third and supplementary volume of the *Almagestum Novum*. 'Ce 3^e volume est plus rare que les deux autres; il est plus important par le recueil des observations qu'il renferme.'—*Lalande.*
- 1597 **RICHARDSON (William, Greenwich Observatory)** CATALOGUE of 7385 STARS, chiefly in the SOUTHERN HEMISPHERE, prepared from Observations, 1822-6, at the OBSERVATORY at PARAMATTA, N.S.W., founded by LT.-GEN. SIR THOMAS M. BRISBANE, F.R.S., with frontispiece of Paramatta Observatory (demolished in 1855), 4to. cl., uncut (SCARCE), £1. 5s 1835
This important work, generally known as the 'Brisbane Catalogue', procured for its author the Copley medal from the Royal Society. 'Brisbane was the founder of Australian science' (*Sir John Herschel*), as well as the hero eponymus of the capital of Queensland.
The Brisbane Observatory was the first regular one established in the Southern Hemisphere.
- 1598 **ROBERTS (Isaac, F.R.S.)** SELECTION of PHOTOGRAPHS of STARS, STAR-CLUSTERS, and NEBULE, with Information concerning the Instruments and the Methods employed in the Pursuit of Celestial Photography, with numerous collotype plates from photographs taken by the author with his 20" Reflector, 2 vols. roy. 4to. cl. (SCARCE), £2. 10s 1894-9
'Presented to Adam Sedgwick, M.A., F.R.S., with compliments of the author, ISAAC ROBERTS, June 1894'—*Inscr. on note paper.*
'In March, 1885, Sir Howard Grubb mounted for Dr. Isaac Roberts, at Maghull, near Liverpool (his observatory has since been transferred to Crowborough in Sussex), a silver-on-glass reflector of 20" aperture, constructed expressly for use in celestial photography. A series of nebula-pictures, obtained with this fine instrument, have proved highly instructive both as to the structure and extent of these wonderful objects; above all one of the great Andromeda nebula.'—*Miss Agnes M. Clerke.*
'With a view of obtaining very prolonged exposures, Roberts spared no trouble or expense in providing his telescope with an exceedingly perfect driving-clock, and at length Grubb succeeded in supplying him with one, electrically controlled, which met his requirements. With this Roberts has made successful exposures, even 4 hours in length, with astonishing results, particularly in respect to nebulae. The Pleiades have been shown to present an almost continuous mass of nebulous matter; the great Orion nebula has been traced far beyond the old limits, whilst the Andromeda nebula, 'now for the first time shown in an intelligible form', has proved to be a vast Saturniform body. . . . A single plate exposed on a region in Cygnus has shown more than 16,000 stars; whilst the spiral nebula in Canes Venatici has been depicted with most wonderful distinctness.'—*G. F. Chambers, F.R.A.S.*
- ROYAL ASTRONOMICAL SOCIETY'S MEMOIRS**—v. Nos. 15-16.
— MONTHLY NOTICES, v. No. 18.
- 1599 **SACRO BOSCO** [Anglice HOLYWOOD, sive HALIFAX] (Johannes de) SPHERA MUNDI cū tribus COMMENTIS nuper editis v. CICCHI ESULANI, FRANCISCI CAPUANI de Manfredonia, JACOBI FABRI STAPULENSIS [accedunt THEORICE NOVÆ PLANETARUM Georgii Purbachii, et in eas Francisci Capuani de Manfredonia Expositio]; printed in a handsome Roman type, with numerous woodcuts and diagrams, folio, LARGE AND VERY FINE COPY in the original oaken boards, stamped leather back (back damaged, and a few ll. wormed), £5. 5s
Venetis, per Simonem Papensem dictum Bivilaquam, Anno Cristi Siderum conditoris, 1499
- 1600 — **ANOTHER COPY**, hf. white vellum extra, morocco labels (wormed, and a few ll. stained), £3. 10s
Hain *14125. It consists of 149 ll., partly in double columns, with 59 and 60 lines to a page. Houzeau-Lancaster (No. 1642) mention only a 4to. edition of the above issue, dated 1499.

IV. ASTRONOMY AND GEODESY, continued:—

- 1602 **SANTBECH** Noviomagus (Daniel) PROBLEMATUM ASTRONOMICORUM et GEOMETRICORUM SECTIONES VII (De Observationibus τῶν φαινομένων; de Canonibus Primi Motus; de Rationibus Umbrarum et de Instrumentis Sciotericis; de Generalibus Magnitudinum Dimensionibus; de Ratione Librationis, quæ in ducendis Aquis observatur; de Artificio eiacuclandi Sphaeras e Tormentis; de Observationibus Geographicis); with numerous spirited woodcuts, and diagrams of Astronomical Instruments, Triangulations, Cannon, etc. etc., folio, old vellum (loose in binding and 4 ll. in neat MS.); VERY RARE, £1. 5s
Basileæ, per Henricum Petri, 1561

A curious circumstance connected with this work is that nothing is known of its author, who is not mentioned by Montucla or Poggendorff (who mistakenly attributes the work to Regiomontanus), or in other biographies. It forms unquestionably an illustration and enlargement of Regiomontanus's treatise on trigonometry (q. v. ante), and is especially interesting for its numerous well-executed woodcuts.

Poggendorff mentions a Johannes Noviomagus (Jan Bronckhorst), 1494-1570, who for some time professed mathematics at Rostock; but there is no evidence to connect him with the above Daniel Santbech Noviomagus.

- 1603 **SCHEINER** (Julius; Prof. Astrophysics, Berlin) POPULÄRE ASTROPHYSIK; with 30 plates and 210 text-illustrations, 8vo. cl., 7s 6d (p. M. 12)
Leipzig, 1908

An excellent semi-popular work on the subject.

- 1604 **SCHWALBE** (Bernhard Georg). und **H. BÖTTGER**: GRUNDRISSE der ASTRONOMIE, mit Lebensbild R. Schwalbes von E. SCHWALBE; with 13 plates (mostly folding and linen-mounted), 8vo. buckram, 4s (p. M. 7)
Braunschweig, 1904

- 1605 **SEARLE** (Arthur, Phillips Prof. Astronomy, Harvard Univ.) CATALOGUE of 8337 STARS between 9° 50' and 14° 10' of South Declination in 1855 for the Equinox 1900, observed with the 8-Inch Meridian Circle at the Astronomical Observatory of Harvard College, 1888-98, impl. 4to. sewn, 9s (p. M. 14 nett)
Leipzig, 1912

- 1606 **SECCHI** (Angelo, S.J., Observatoire du Collège Romain) Le SOLEIL, 2^e [dernière] Edition, revue et augmentée; with 13 fine plates of solar protuberances, nebulae, and star spectra (mostly COLOURED), and 280 woodcuts (a few tinted), 2 vols. roy. 8vo., with Atlas, containing 6 spectrum plates (folding), sm. 4to.—in all 3 vols. hf. brown calf neat (nice copy), £1. 1s (p. F. 33 nett sewn) 1875-7

'The most complete and beautifully illustrated treatise on the sun which has yet appeared.'—Prof. Simon Newcomb.

- 1608 ——— Die STERNE: Grundzüge der Astronomie der Fixsterne; with 9 plates (some coloured), and 78 woodcuts, post 8vo. hf. black calf neat, 4s (p. M. 8 sewn)
Leipzig, 1878

- 1609 **SNYDER** (Carl) The WORLD MACHINE: the First Phase: the COSMIC MECHANISM, illustrated, large 8vo. cl. (o. p.), 10s 6d
1907

An unusually interesting and readable history of astronomy. But the author would seem not quite to face the cosmic implication of the fact of the dissipation of energy.

- 1610 **STERNKARTEN** (Akademische) für den GÜRTEL des HIMMELS von 15° südlicher bis 15° nördlicher Abweichung, nach BESSEL'S VORSCHLAG entworfen von VERSCHIEDENEN ASTRONOMEN, herausgegeben von der KÖNIGLICHEN AKADEMIE der WISSENSCHAFTEN zu BERLIN; 25 finely engraved star-maps, neatly linen-guarded, large atlas 4to. handsomely bound in hf. maroon morocco, cl. sides (SCARCE), £1. 10s
Berlin, 1859

Based on Bessel's star catalogue, and including stars to the 9.10 magnitude. The maps are by F. W. A. ARGELANDER, CARL BREMIER, K. L. HARDING, K. L. HENCKE, K. F. KNORRE, K. T. R. LUTHER, C. F. R. OLUFSEN, J. F. J. SCHMIDT, J. P. WOLFFERS, and a few others.

This important atlas was apparently unknown to Mr. G. F. Chambers.

- 1611 **STEWART** (Matthew, F.R.S., Minister at Rosneath; Prof. Math., Edin.) The DISTANCE of the SUN from the EARTH DETERMINED, by the THEORY of GRAVITY, with 2 plates, 8vo., THICK PAPER; contemporary green morocco extra, g. e. (fine copy), with bookplate of Philip 2nd Earl Stanhope, F.R.S., 10s 6d
Edin., 1763

The subject is treated geometrically. The author wrongly computed the distance at 119,000,000 miles, which evoked a bitter attack by JOHN LANDEN, F.R.S.

- 1612 ——— TRACTS, PHYSICAL AND MATHEMATICAL, containing an Explanation of several important Points in PHYSICAL ASTRONOMY, and a NEW METHOD for ASCERTAINING the SUN'S DISTANCE from the Earth, by the Theory of Gravity, 19 folding plates, 8vo. hf. calf neat (nice copy); 12s 6d ib., 1761

'In these tracts, after laying down the doctrine of centripetal forces in a series of propositions requiring only a knowledge of the elements of plane geometry and of conic sections, he proceeded to determine in the same manner 'the effect of those forces which disturb the motions of a secondary planet.' A theorem in which he deduced the motions of the moon's apsides attained an accuracy far surpassing that reached by Newton. The result confirmed that arrived at by Charles Walsley in 1749.'—D. N. B.

- 1613 **STRUVE** (Friedrich Georg Wilhelm v., Directeur de l'Observatoire) DESCRIPTION de l'OBSERVATOIRE ASTRONOMIQUE CENTRAL de POULKOVA; with coloured plan and 38 plates (some folding) of the building and the instruments in use, 2 vols. impl. 4to. boards (SCARCE), £1. 1s
St. Pétersbourg [Petrograd], 1845

With appendix containing a catalogue of books in the library of the observatory, which have probably since made a Bolshhevik bonfire.

v. DUN ECHT OBSERVATORY, No. 50.

- 1614 **STRUVE** (Otto Wilhelm v.; Director, Pulkova Observatory) LIBRORUM in BIBLIOTHECA SPECULAE PULCOVENSIS Anno 1858 exeunte contentorum CATALOGUS SYSTEMATICUS [cum INDICIBUS], roy. 8vo. (pp. 1000), hf. calf; presentation copy to John Lee, F.R.S., F.S.A., founder of the Hartwell Observatory (SCARCE), 12s 6d
St.-Petersbourg [Petrograd], 1860

'A valuable Catalogue of Astronomical Works. A present to me from Professor F. G. W. von Struve, and presented to me by his Son in July 1860. J. LEE.—Inscr. on flyleaf.

Valuable for containing a number of works and pamphlets not to be found elsewhere.

- 1615 ——— MESURES MICROMÉTRIQUES des ÉTOILES DOUBLES; with 4 plates, 2 vols. '78-93; MIKROMETERMESSUNGEN von DOPPELSTERNEN, ausgeführt am 30-zölligen Refractor zu Pulkowa, 1901-3 vols. impl. 4to. sewn (Vol. I in boards), £1. 10s (p. M. 82 nett)
ibidem, 1878-1901

A noble series of measures of the most important double stars.—Edward Crossley, F.R.A.S.

IV. ASTRONOMY AND GEODESY, *continued* :—**SOCIÉTÉ ASTRONOMIQUE de FRANCE: BULLETIN—v. No. 194.**

- 1617 **SVANBERG (Jöns)** EXPOSITION des OPÉRATIONS faites en LAPONIE, pour la Détermination d'un Arc du Méridien, 1801-3, par MM. OFVERBOM, SVANBERG, HOLMQUIST, et PALANDER; with 3 plates, 8vo. calf, with auto., armorial bookplate, notes, and references by JOHN LEE, Q.C., F.R.S., F.S.A., also auto. of Prof. Robert Woodhouse, F.R.S. (RARE), 12s 6d *Stockholm, 1805*
 'It is well known that the Lapland arc was measured at the beginning of the present century by Svanberg and others under the direction of the Stockholm Academy of Sciences. Lalande alludes to the early stages of this operation. Svanberg obtained a decidedly shorter length for a degree of the meridian than that of Maupertuis, namely 57196.159 instead of 57437.9 toises; but the middle points of the two degrees are not quite identical.'—*J. Todhunter, F.R.S.*
- 1618 **TODD (David P., Amherst Coll.)** STARS and TELESCOPES: a Handbook of Popular Astronomy, founded on the 9th Edition of LYNN'S Celestial Motions, with coloured frontispiece, and numerous plates and woodcuts (including many portraits), post 8vo. cl. gilt, 4s 6d (p. 8s 6d nett) *Boston [Mass.], 1899*
- 1619 **TODHUNTER (Isaac, F.R.S., St. John's Coll., Cantab.)** HISTORY of the MATHEMATICAL THEORIES of ATTRACTION, and the FIGURE of the EARTH, from NEWTON to LAPLACE, with diagrams, 2 thick vols. 8vo. cl., uncut (VERY SCARCE), £3. *1873*
- 1620 ——— ANOTHER COPY, 2 vols. cl., with notes by Lord Justice Stirling, F.R.S., £3. 3s
 'An invaluable work, the first comprehensive history on the subject. 'Although much has been published on the History of Astronomy, yet the progress of the mathematical development on the history of attraction has been left almost untouched.'—*Preface.*
- 1621 **TROMHOLT (Sophus)** CATALOG der in Norwegen bis Juni 1878 beobachteten NORDLICHTER, nach dem Tode des Verfassers herausgegeben von J. FR. SCHROETER, roy. 4to. (pp. xxiii + 422), sewn, 10s *Kristiania, 1902*
 One of the most valuable catalogues of auroræ boreales.
- 1622 **TURNER (Herbert Hall, F.R.S., Savilian Prof. Astronomy, Oxon.)** ASTRONOMICAL DISCOVERY, with 15 portraits and plates, 8vo. cl., 7s (p. 10s 6d nett) *1904*
 Containing chapters on Uranus and Eros; Discovery of Neptune; Bradley's Discoveries; Accidental Discoveries; Schwabe and the Sun-Spot Period; and the Variation of Latitude.
- 1623 ——— THE GREAT STAR MAP: a brief general Account of the International Project known as the Astrogaphic Chart, with frontispiece of Cluster M. 3. Canes Venatici by G. W. Ritchie, cr. 8vo. cl., 2s *1912*
- 1624 ——— MODERN ASTRONOMY: some Account of the Revolution of the last Quarter of a Century, with 30 plates and other illustrations, cr. 8vo. cl., 3s (p. 6s nett) *1901*
 v. the OBSERVATORY, Nos. 162-3.
- 1625 **WALLACE (William, F.R.S.E., Prof. Mathematics, Edin.)** GEOMETRICAL THEOREMS and ANALYTICAL FORMULÆ, with their Application to the SOLUTION of GEODETICAL PROBLEMS, and a Description of two COPYING INSTRUMENTS, with 3 folding plates, and woodcuts, 8vo. cl., with author's inser. to Robert Main, pr., F.R.S. (scarce), 6s 6d *Edin., 1839*
 The appendix describes the author's inventions, the eidograph, for copying plans and other drawings, and the chorograph, for describing on paper any triangle having one side and all its angles given.
- WASHBURN OBSERVATORY—v. No. 209.**
- WASHINGTON ASTRONOMICAL and METEOROLOGICAL OBSERVATIONS—v. No. 210.**
- 1626 [**WILKINS (John, 14th Bp. of Chester, first Sec. R. S.)**] The DISCOVERY of a WORLD in the MOONE, or a Discourse tending to prove, that 'tis probable there may be another Habitable World in that Planet, first edition, with frontispiece, woodcuts, and diagrams, 18mo. calf gilt (a few wormholes in blank margin, otherwise a LARGE AND VERY FINE COPY); very rare, £3. 3s
E. G. for Michael Sparke and Edward Forrest, 1638
- 1627 [——— SECOND EDITION:] The DISCOVERY of a NEW WORLD, or, a Discourse tending to prove, that 'tis probable there may be another HABITABLE WORLD in the MOONE, with a Discourse concerning the Possibility of a PASSAGE thither; and the third Impression, enlarged, with fine astronomical frontispiece with Copernicus, Galileo, and Kepler, by W. MARSHALL, and woodcuts: DISCOURSE concerning a NEW PLANET. Tending to prove, That 'tis probable our Earth is one of the Planets, first edition, with woodcuts, and engraving on copper—2 vols. sm. 8vo. in 1, sprinkled calf (LARGE AND VERY SOUND COPIES); rare, £1. 10s *J. Maynard, 1640*
- 1628 ——— ANOTHER COPY, 2 vols. in 1, old tree-calf (back damaged), £1. 5s
 The 'Discourse' is a stout defence of the Copernican system, by no means generally accepted at this time. Although mentioning 'third Impression', this is really the second edition of the first work, and the first collected edition.
 This edition of the *Discovery* has the 14th Proposition, famous in the history of airmanship, which is not included in the first: 'That tis possible for some of our posteritie, to find out a conveyance to the other world; and if there be inhabitants there, to have commerce with them.' The 13th Proposition, however, is shortened in this edition. The conveyance suggested is a 'flying Chariot', of which the particulars of construction are given in the 'Mathematicall Magick' (v. ENGINEERING, post). The author supposes a natural passage to the moon, whence he imagines locusts to come, and whither he supposes birds to migrate.
- 1629 ——— FOURTH [LAST] EDITION, corrected and amended, with frontispiece and woodcuts, 2 vols. sm. 8vo. in 1, old calf, newly rebaked (front. and some ll. soiled), 17s 6d *J. Gillibrand, 1634*
- 1630 [———] LE MONDE dans la LUNE, divisé en deux Livres. Le Premier, prouvant que la Lune peut estre un Monde. Le Second, Que la Terre peut-estre une Planetette. De la Traduction du Sr [J.] DE LA MONTAGNE; with engraved frontispiece, and woodcuts, thick 12mo. fine copy in old calf gilt (RARE), £1. 5s *Rouen, Jacques Cailloué, 1656*
 'This translation, bearing the illustrious name of Montagne, is scarce, and was unknown to Lalande. The preface, by Montagne, is written with great freedom and courage.'—*Libri Catalogue.*
 The lax M. Libri here had MONTAIGNE in his head, and makes himself guilty of a singular chronological blunder, since Montaigne died in 1592.

IV. ASTRONOMY AND GEODESY, continued:—

- 1632 **WISLICIENUS** (Walter F.; *Univ. Strasbourg*) *ASTRONOMISCHE CHRONOLOGIE*: ein Hilfsbuch für Historiker, Archaeologen, und Astronomen, 8vo. cl., 3s (p. M. 5) *Leipzig, 1895*
- 1633 **WOLF** (Charles, *de l'Institut; Observatoire de Paris*) *LES HYPOTHESES COSMOGONIQUES*: Examen des Théories scientifiques modernes sur l'Origine des Mondes, suivi de la Traduction de la THÉORIE du CIEL de KANT, roy. 8vo. sewn (SCARCE), 15s *1886*
 'Mon principal but était de montrer que la théorie de Laplace répond encore aujourd'hui le mieux possible aux conditions que l'on est en droit d'exiger d'une hypothèse cosmogonique'.—*Preface*.
- 1634 **WORMS** (Henry, F.R.A.S.) *THE EARTH and its MECHANISM*; the various PROOFS of the EARTH'S ROTATION, with the Instruments used; with the THEORY of FOUCAULT'S PENDULUM and GYROSCOPE, numerous woodcuts and diagrams, 8vo. cl., 7s *1862*
- 1635 ——— *ANOTHER COPY, cl., with references by Lord Justice Stirling, F.R.S., 7s 6d*
 Giving interesting and full accounts of the experiments on falling bodies made by Guglielmini, Benzenberg, and Ferdinand Reich, and proposing new modes of the suspension of the pendulum, modifications of the gyroscope, etc. etc., while the theoretical part 'contains the solution of intricate problems of analytical mechanics'.—*Preface*.
- 1636 **WRIGHT** (Thomas Wallace, *Union College*), and John Fillmore HAYFORD, *U.S. Coast and Geodetic Survey*: *THE ADJUSTMENT of OBSERVATIONS by the METHOD of LEAST SQUARES*, with Applications to Geodetic Work, 2nd Edition, with 28 diagrams, 8vo. cl., 8s (p. 12s 6d nett) *New York, 1906*
 'Chapter IX contains an exceedingly important application of the method of least squares to the selection of methods of observation'.—*Preface*.

YERKES OBSERVATORY: PUBLICATIONS—v. No. 211.

V. PHYSICS.

- 1637 **ABNEY** (Sir William de Wiveleslie, R.E., F.R.S.) *COLOUR VISION*: Tyndall Lectures in 1894, with coloured frontispiece, and numerous diagrams, 8vo. cl. (o. p.), 7s 6d *1895*
 'Bringing into notice the latest results which had been obtained from physical experiments'.—*Preface*.
- 1638 **ABRAHAM** (Henri) *RECUEIL d'EXPÉRIENCES ÉLÉMENTAIRES de PHYSIQUE*, publié avec la Collaboration de nombreux Physiciens; with numerous woodcuts, 2 vols. 8vo. in 1, hf. calf, 6s 6d (p. F. 11 nett sewn) *1904*
- 1639 ———, et Paul **LANGEVIN**, *LES QUANTITÉS ÉLÉMENTAIRES d'ÉLECTRICITÉ*: IONS, ÉLECTRONS, CORPUSCULES: MÉMOIRES réunis et publiés par; with 3 plates and numerous text-illustrations, thick vol. large roy: 8vo. in 2, buckram, uncut, t. e. g., £1. 2s 6d (p. F. 38.50 nett sewn) *Société française de Physique, 1905*
 Containing all the important memoirs that went towards constituting the Electron Theory and the phenomena of Radioactivity, including those (all in French) by HENRI BECQUEREL, SIR WILLIAM CROOKES, PROF. and MME. CURIE, DRUDE, GOLDSTEIN, HERTZ, HITTORF, SIR JOSEPH LARMOR, LENARD, LORENTZ, FERRIN, PLÜCKER, POINCARÉ, RIGHI, SIR ERNEST RUTHERFORD, SIR J. J. THOMSON, and many others.
- 1640 **AIRY** (Sir George Biddell, P.R.S., *Astronomer Royal*) *ON SOUND and ATMOSPHERIC VIBRATIONS*; with the Mathematical Elements of MUSIC, with 2 plates, post 8vo. cl., uncut (o. p.), 5s *1868*
- 1641 ——— *TREATISE ON MAGNETISM*, with 74 woodcuts, post 8vo. cl. (o. p.), with auto. of Lord Justice Stirling, F.R.S., 7s 6d *1870*
 Largely mathematical. The author was the inventor of a new system of compensation as applied to the mariner's compass, and would have been unspeakably angered that the men of the mercantile marine should be murdered, like Captain Fryatt and the crew of the 'Belgian Prince', by people who in his time were thought to be a civilized nation.
- 1642 ———, *AUTOBIOGRAPHY* of, edited by WILFRID AIRY, M.I.C.E., with fine steel portrait by Jeens, 8vo. cl., 4s (p. 12s) *Univ. Press, Cambridge, 1896*
 ——— v. CAMBRIDGE PHILOSOPHICAL SOCIETY, No. 28, *EARTH'S CRUST (METEOROLOGY)*, post, MEMOIRS, No. 362, *OPTICAL PAPERS*, post, and *SCIENTIFIC MEMOIRS*, No. 394.
- 1643 **ALDINI** (Giovanni; *Prof. Physics, Bologna; nephew of Galvani*) *ACCOUNT of the late IMPROVEMENTS in GALVANISM*, with a series of CURIOUS and INTERESTING EXPERIMENTS, with APPENDIX, containing the Author's Experiments on the Body of a Malefactor executed at Newgate, with 4 copperplates, 4to. boards, uncut (SCARCE), 12s 6d *1803*
- 1644 ——— *ESSAI théorique et expérimental sur le GALVANISME*, avec une Série d'Expériences, faites en Présence des Commissaires de l'Institut National de France, et en divers Amphithéâtres anatomiques de Londres; with 10 fine COLOURED FOLDING PLATES, 4to. fine copy in contemporary tree-calf extra (SCARCE), £1. 5s *1804*
 The author was a nephew of GALVANI, and contributed largely towards popularising the latter's discoveries. He also was the first to propose the utilisation of the tides for mechanical purposes. The experiments on the malefactor (one Forster) in the first work were of a rather gruesome character; they constituted however the first experiments on the human body with the galvanic current.
- 1645 **ALDOUS** (John Clement Primrose; *pr., Fellow of Jesus Coll., Cantab.; Chief Instructor, H.M.S. Britannia*), *ELEMENTARY COURSE of PHYSICS*, edited by, with very numerous woodcuts, and coloured plate, thick post 8vo. cl., 3s 6d (p. 7s 6d) *1898, or 1900*
- 1646 ——— [NEW EDITION, with Corrections], with numerous woodcuts, and coloured plate, thick post 8vo. cl., 4s (p. 7s 6d) *1907*
 CONTENTS:—Mechanics, Properties of Matter, Hydrostatics, Heat, by the EDITOR; Wave Motion, Sound, Light, by W. D. EGGAR; Magnetism, Electricity, by F. R. BARRELL.

V. PHYSICS, continued :—

- 1648 **ALEMBERT** (Jean le Rond d', *de l'Institut*; F.R.S.; *Encyclopédiste*) *ESSAI d'une NOUVELLE THÉORIE de la RÉSISTANCE des FLUIDES*; with 2 plates, sm. 4to. *contemporary mottled calf gilt (fine copy)*; *rare*, 10s 6d 1752
Investigating the resistance met by a body moving in water (e.g. a ship). As the theoretical results were not satisfactory, Turgot ordered original experiments on the subject which are given in *Nouvelles Expériences* (q.v. *infra*).
- 1649 — **TRAITÉ de DYNAMIQUE**, dans lequel les Loix de l'Équilibre et du Mouvement des Corps sont réduites au plus petit Nombre possible, et démontrées d'une Manière nouvelle, et, où l'on donne un Principe général pour trouver le Mouvement de plusieurs Corps qui agissent les uns sur les autres d'une Manière quelconque, première édition; with 4 plates, sm. 4to. *contemporary French mottled calf (rare)*, 12s 6d 1743
- 1650 — **NOUVELLE ÉDITION**, fort augmentée par l'Auteur; with 5 plates, 4to. *contemporary hf. calf (RARE)*, 17s 6d 1758
BEST EDITION. 'In this he enunciates the principle known by his name, namely, that the 'internal forces of inertia' (that is, the forces which resist acceleration) must be equal and opposite to the forces which produce the acceleration. The application of this principle enables us to obtain the differential equations of motion of any rigid system.'—*W. W. R. Ball*.
At end are some further Reflexions on his Lunar Tables (pp. 18), with a separate pagination.
- 1651 — **TRAITÉ de l'ÉQUILIBRE et du MOUVEMENT des FLUIDES**, pour servir de Suite au *Traité de Dynamique*, nouvelle Édition, revue et augmentée; with 10 plates, 4to. *contemporary hf. calf (nice copy)*; *rare*, 12s 6d 1770
The author here applies his principle of equilibrium to fluids, which 'led to partial differential equations which he was unable to solve' (*W. W. R. Ball*).
- 1652 — **Marie Jean Antoine Nicolas Caritat, Marquis de CONDORCET, et Charles BOSSUT, S.J.**: *NOUVELLES EXPÉRIENCES sur la RÉSISTANCE des FLUIDES*; with 5 folding plates, 8vo. *French mottled calf*, 7s 6d 1777
- 1653 **ALHAZENUS** [vere **ABU ALI ALHAZEN bin ALHAZEN**] *OPTICÆ THESAURI Libri VII*, nunc primùm editi, ejusdem *LIBER de CREPUSCULIS*, et *NUBIUM ASCENSIONIBUS*; item *Vitellonis Libri X*, omnes instruatî, Figuris illustrati et aucti; adjectis etiam in *Alhazenum Commentariis a FREDERICO RISNERO*; with numerous woodcuts, folio, old limp vellum (*slightly foxed as usual, otherwise a SOUND AND VERY LARGE COPY*); *very rare, with auto. of GIOVANNI ALFONSO BORELLI* (1608-79), £4. 10s Basileæ, 1572
Including the earliest scientific account of atmospheric refraction. It also contains some ingenious geometry, amongst other things, a geometrical solution of the problem to find at what point of a concave mirror a ray from a given point must be incident so as to be reflected to another given point.—*W. W. R. Ball*.
'To the law of the equality of the angles in reflexion, which he learned from the Greeks, he added the law that both angles lie in the same plane. He made a study of spherical and parabolic mirrors, and is the first physicist to give a detailed description of the human eye.'—*Prof. Cajori*.
VITELLO's work contains not only a summary of all that was known on optics to the ancients and to Alhazen, but also a number of original investigations. 'A work on optics less diffuse and more systematic than that of Al Hazen, on which it was based. Vitello explained the twinkling of stars as due to the motion of the air, and showed that the effect was intensified if the star was viewed through water in motion. He pointed out that the rainbow was not formed by reflexion alone, as was taught by Aristotle, but was due to both reflexion and refraction.'—*Prof. Cajori*.
- 1654 **AMPÈRE** (André Marie; *de l'Institut*) *DESCRIPTION d'un APPAREIL ÉLECTRO-DYNAMIQUE*, 2^e Édition; with folding plate on copper, comprising 29 figures, post 8vo. (pp. 32), *sewn (rare)*, 8s 6d 1826
This work contains the author's invention of the astatic needle as applied to the galvanometer.
- 1655 — **THÉORIE des PHÉNOMÈNES ÉLECTRO-DYNAMIQUES**, uniquement déduite de l'Expérience [avec ses Mémoires à l'Académie Royale des Sciences, 1820, '23 et '25], édition originale; with 2 folding plates on copper, 4to. *hf. cl. neat (LARGE AND SOUND COPY)*; *RARE*, £1. 12s 6d 1826
Novembre, 1826
- 1656 — **MÊME OUVRAGE**, avec *MÉMOIRE sur l'ACTION MUTUELLE d'un CONDUCTEUR VOLTAÏQUE et d'un AIMANT* (pp. 88); with 3 folding plates—2 vols. cr. 4to. in 1, *hf. cl. (corner torn off one plate of the first work)*, £2. 2s 1826—[Bruxelles, '27]
ORIGINAL EDITION OF THE AUTHOR'S MOST IMPORTANT WORK, which laid the foundation of electro-dynamics, and prepared the way for Faraday's discoveries. The author's name is immortalized in electrical science as the unit for the electric current.
'The experimental investigation by which Ampère established the laws of the mechanical action between electric currents is one of the most brilliant achievements in science'.—*Prof. J. Clerk Maxwell*.
- 1657 **ANDERSON** (Richard, F.C.S.) *LIGHTNING CONDUCTORS: their History, Nature, and Mode of Application*; 3rd [last] Edition, revised and enlarged, with numerous woodcuts, 8vo. *cl. (o. p.)*, 7s 6d (p. 16s) 1895
Including a copious history from their invention by Benjamin Franklin to 1885, and a bibliography, 1628-1884 (pp. 48).
- 1658 **ANDRADE** (Jules, *Univ. Rennes*) *LEÇONS de MÉCANIQUE PHYSIQUE*; with diagrams, roy. 8vo. *buckram, uncut*, 6s (p. F. 10 nett sewn) 1898
- 1659 — **Le MOUVEMENT: Mesures de l'Étendue et Mesures du Temps**; with 46 illustrations, 8vo. *cl., or, buckram*, 3s (p. F. 6.60 nett) 1911
- 1660 **ANDREWS** (Thomas, M.D., F.R.S., *Prof. Chemistry, Queen's Coll., Belfast*) *SCIENTIFIC PAPERS*, with *Memoir* by PETER GUTHRIE TAIT, F.R.S.E., and A. CRUM BROWN, F.R.S., with steel portrait, 6 plates, and woodcuts, 8vo. *cl.*, 10s (p. 18s) 1889
Including the author's important papers which contain his discovery of the continuity of the liquid and gaseous states and of the critical temperature of gases, besides important researches (in conjunction with Prof. Tait) on ozone, and on the heat of combination.
— On the CONTINUITY of the GASEOUS and LIQUID STATES of MATTER (1876)—v. THERMODYNAMICS, *post*.

V. PHYSICS, continued:—

- 1662 **ANGSTRÖM** (Anders Jöns, *Univ. Upsala*; F.R.S.) RECHERCHES sur le SPECTRE NORMAL du SOLEIL; with frontispiece of a spectrometer: Atlas, contenant les Longueurs d'Onde des Raies Fraunhoferiennes données en $\frac{1}{10}, \frac{1}{100}, \frac{1}{1000}$ de Millimètre; with 6 double plates, 2 vols. large 4to. in 1, hf. morocco (SCARCE), £2. 5s Upsal, 1868
- 1663 ——— TEXT ONLY, with frontispiece of spectrometer, large 4to. cl., 12s 6d
 'Angström takes rank after Kirchhoff as a subordinate founder, so to speak, of solar spectroscopy. His great map of the 'normal' solar spectrum [i.e. the one depending exclusively on wave-length] was published in 1868. Robert Thalén was his coadjutor in its execution, and the immense labour which it cost was amply repaid by its eminent and lasting usefulness.'—*Miss Agnes M. Clerke*.
- 1664 ———, et Tobias Robert THALÉN; *Univ. Upsala*: RECHERCHES sur les SPECTRES des METALLOIDES; with 2 folding plates, 4to. sewn, with numerous notes by Prof. A. S. Herschel, F.R.S. (scarce), 10s 6d *ibidem*, 1875
 ——— v. MEMOIRS, No. 362.
- ANNALEN der PHYSIK und CHEMIE**—v. No. 6.
ANNALES de CHIMIE et de PHYSIQUE—v. Nos. 7-9.
- 1665 **ANTOMARI** (Xavier) LEÇONS de CINÉMATIQUE et de DYNAMIQUE, suivies de la Détermination des Centres de Gravité; with diagrams: LEÇONS de STATIQUE; with diagrams—2 vols. 8vo. in 1, hf. black morocco neat, cl. sides (nice copy), 4s 6d 1902-1897
- 1666 **APPEL** (Paul Emile, de l'Institut) COURS de MÉCANIQUE, 3^e [dernière] Edition, entièrement refondue; with 191 illustrations, 8vo. hf. black morocco neat, cl. sides, t. e. g. (as good as new), 8s (p. F. 13.20 nett sewn) 1912
- 1667 ——— LEÇONS sur l'ATTRACTION et la FONCTION POTENTIELLE, rédigées par M. CHARLIAT; with 24 diagrams, roy. 8vo. sewn (scarce), 4s 1892
- 1668 ———, et T. DAUTEVILLE, *Univ. Montpellier*: PRÉCIS de MÉCANIQUE RATIONNELLE: Introduction à l'Étude de la Physique et de la Mécanique appliquée; with 222 diagrams, roy. 8vo. (pp. 729), handsomely bound in hf. pigskin, cl. sides, uncut, t. e. g., 16s (p. F. 27.50 nett sewn) 1910
- 1669 **ARCHIMEDES**: DE HIS QUÆ VEHUNTUR IN AQUA Libri II, à FREDERICO COMMANDINO in pristinum Nitorem restituti, et COMMENTARIIS illustrati; with diagrams, sm. 4to. sewn (LARGE AND FINE COPY); RARE, £1. 1s Bononie, Alex. Benacius, 1565
 'Jusqu'à présent la meilleure édition.'—*Montucla*. 'Ses traductions des mathématiciens anciens ont contribué aux progrès de cette science, et sont la source où les traducteurs et commentateurs postérieurs ont presque tous puisé.'—*Biogr. Gén.*
 A copy of this work, inferior in condition to the above, fetched £1. 16s at auction seven years ago.
- 1670 ——— De INSIDENTIBUS AQUÆ Libri II [edente NICOLAO TARTALEA]; with printer's device on title, and numerous diagrams, 2 vols. sm. 4to. in 1, boards (blank side margin of one l. cut off, otherwise a sound and large copy); VERY RARE, with auto. of the late Dr. W. H. Besant, F.R.S., £1. Venetiis, Curtius Trojanus, 1565
 Both the above works are Latin translations, by different editors, of *Περὶ τῶν ὑδάτι ἐπιστημένων*.
 'Cet ouvrage, incomplet en grec, a été publié par Tartaglia sur un MS. latin. On y trouve une bonne théorie des corps flottants, fondée sur la pression égale d'un fluide.'—*Biogr. Gén.*
 A copy fetched £1. 10s at auction in 1910.
- 1671 **ARISTOXENUS Musicus**: HARMONICORUM ELEMENTORUM Libri III. Cl. Ptolemæi HARMONICORUM, seu de Musica, Libri III. Aristotelis de OBJECTO AUDITUS Fragmentum, ex Porphyrii Commentariis. [Porphyrii de X Prædicamentis Liber.] Omnia nunc primum latine conscripta et edita ab ANT. GOGAVINO Graviensi, editio princeps; with printer's device on title and last l., and diagrams, 4to. (? LARGE PAPER); old limp vellum (VERY FINE COPY); rare, £2. 10s Venetiis, Vinc. Valgrisius, 1562
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- 1672 **ARMSTRONG** (William George first Lord, F.R.S.) ELECTRIC MOVEMENT in AIR and WATER, with Theoretical Inferences; 2nd Edition with Supplement, continuing his Experiments, with an Extension made in Concert with HENRY STROUD, with numerous fineplates (many COLOURED) of spark phenomena, 2 vols. folio in 1, cl. gilt (SCARCE), £1. 10s 1899
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- 1673 **ATWOOD** (George, F.R.S., *Fellow of Trinity*) TREATISE on the RECTILINEAR MOTION and ROTATION of BODIES, with Description of original Experiments on the Subject, 8 folding plates by BASIRE, roy. 8vo. contemporary tree-calf gilt (SCARCE), £1. 12s 6d Cambridge, 1784
- 1674 ——— ANOTHER COPY, hf. calf gilt, with auto. of William Allen, F.R.S., £1. 10s
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- 1675 **BALL** (Sir Robert Stawell, F.R.S.; *Lowndean Prof., Cantab; Royal Astronomer, Ireland*) THE THEORY of SCREWS: a Study in the Dynamics of a Rigid Body, with frontispiece, 8vo. cl., 4s 6d (p. 10s 6d) Dublin, 1876

V. PHYSICS, continued:—

- 1677 **BACON** (Roger, O.M.; 'Doctor Mirabilis'); ROGERII BACCONIS Angli, Viri eminentissimi, PERSPECTIVA, in qua, quæ ab aliis fuscè traduntur, succincte, nervose et ita pertractantur, ut omnium Intellectui facile pateant, nunc primum in Lucem edita Opera et Studio JOHANNIS COMBACHII, Philosophiæ Professoris in Academia Marpurgensi, editio princeps; with numerous diagrams, sm. 4to. contemporary limp vellum (slightly browned as usual, but an UNUSUALLY SOUND AND CLEAN COPY); very rare, £3. 10s

Francofurti, 1614

This work includes the important *Tractatus de Speculis*, 'enunciating the laws of reflexion and in a general way of the refraction of light, and using them to give a rough explanation of the rainbow and of magnifying glasses' (W. W. R. Ball). It also contains the determination of the focus of the spherical mirror, and his first suggestion of spherical aberration, by stating that the reflected rays did not meet at one point, but in a series of points in the optical axis.

The above work forms Part V of the *Opus Majus*.

- 1678 ——— **OPUS IDEM**, necnon SPECULA MATHEMATICA, in qua de SPECIERUM MULTIPLICATIONE, earundemque in inferioribus Virtute agitur Liber omnium Scientiarum studiosis apprimè utilis, editus Opera et Studio JOHANNIS COMBACHII, editiones principes; with numerous diagrams—2 vols. sm. 4to. in one, contemporary limp vellum (browned, but sound copies); very rare, £5. 5s

ibidem, 1614

The second work, which afterwards formed part IV of the *Opus Majus*, contains Roger Bacon's views on astronomy and physical geography. All the original editions of his writings are now of great rarity.

——— OPERA; and OPUS MAJUS—v. Nos. 232-3.

- 1679 **BAIN** (Alexander) ACCOUNT of some REMARKABLE APPLICATIONS of the ELECTRIC FLUID to the USEFUL ARTS; with a Vindication of his CLAIM to be FIRST INVENTOR of the ELECTRO-MAGNETIC PRINTING TELEGRAPH, and also of the ELECTRO-MAGNETIC CLOCK, by JOHN FINLAISON, Actuary of the National Debt Office, with 5 large folding plates, post 8vo. sewn, with inscr. to Earl Russell (scarce), 14s

1843

'To the Right Honourable The Lord John Russell with the author's most respectful compliments.'—Inscr. on flyleaf.

- 1680 ——— ANOTHER COPY; also: THE PETITION of ALEXANDER BAIN AGAINST, and the Evidence before the Committee on, the ELECTRIC TELEGRAPH COMPANY BILL—2 vols. post 8vo. original paper cover, 17s 6d

1843-6

The second piece includes 18 pp. of evidence by GENERAL SIR C. W. PASLEY.

The inventor was a Caithnessshire man, and apparently no connexion of his contemporary namesake the Rector of Aberdeen University.

'He was one of the first to devise a method by which a number of clocks could be worked electrically from a standard time keeper . . . He discovered independently the use of the earth circuit. Electric fire-alarms and sounding apparatus were also among his inventions. His most important invention was the chemical telegraph of 1843. This apparatus could be worked at a speed hitherto impossible, and its invention certainly entitles Bain to the credit of being the pioneer of modern high-speed telegraphy . . . Perhaps the most valuable part of the invention consisted in the use of strips of perforated paper for the transmission of the message. This contrivance was long after adopted by Wheatstone, and is in use in all the existing high-speed systems of telegraphy.'—D. N. B.

- 1681 **BALIANI** (Giovanni Battista) De MOTU NATURALI GRAVIUM SOLIDORUM; with vignette on title and numerous diagrams, sm. 4to. hf. bound (VERY LARGE AND FINE COPY); RARE, 17s 6d

Genuæ, 1638

ORIGINAL EDITION of this curious work, in which the author attempts to ascribe to himself nearly all of Galileo's discoveries (v. Poggendorff's *Geschichte der Physik*, pp. 292-3). An old autograph note on the last l., dated Sept. 22, 1639, states that this was a presentation copy from the author.

- 1682 **BALY** (Edward Cecil Cyril, F.R.S., Prof. Inorganic Chemistry, Liverpool) SPECTROSCOPY, with 163 illustrations, including 5 folding plates, post 8vo. cl. (cover damp-stained), 6s (p. 10s 6d nett) 1905

- 1683 ——— ANOTHER COPY, cl. (fresh copy), 7s

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- 1684 **BARLOW** (Peter, F.R.S., Royal Military Academy) ESSAY on MAGNETIC ATTRACTION, and on the LAWS of TERRESTRIAL and ELECTRO-MAGNETISM; 2nd Edition, much enlarged, with 6 plates by Lowry, 8vo. hf. calf (scarce), 10s

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'Giving the details of his experiments to devise a remedy for the large deviations of the compass due to the increasing quantities of iron used in the construction and fittings of ships, and describing a simple method of correcting ships' compasses by fixing a small iron plate in such a position as to compensate all other attractions. . . . In the second edition he succeeded in connecting the whole of his experimental results by a mathematical theory based on a few simple assumptions.'—D. N. B. The author was moreover the first to notice the fact that the strength of the electric current is the same in all places of the conduit—a discovery which enabled Ohm to formulate his Law.

——— v. SCIENTIFIC MEMOIRS, No. 394.

- 1686 **BARROW** (Isaac, D.D., F.R.S.; Master of Trinity; tutor of Sir Isaac Newton) LECTIONES XVIII, in quibus OPTICORUM PHENOMENON genuinè Rationes investigantur, ac exponuntur: LECTIONES GEOMETRICÆ: in quibus (praesertim) generalia CURVARUM LINEARUM SYMPTOMATA declarantur—2 vols. sm. 4to. in 1, with copperplates; contemporary calf, rebaked (LARGE AND SOUND COPY); RARE, £1. 15s

Londini, 1669-70

FIRST EDITIONS of the author's two chief mathematical works. 'In the Optical Lectures many problems connected with the reflexion and refraction of light are treated with ingenuity. The geometrical focus of a point seen by reflexion or refraction is defined; and it is explained that the image of an object is the locus of the geometrical foci of every point on it. Barrow also worked out a few of the easier properties of thin lenses; and considerably simplified the Cartesian explanation of the rainbow. The geometrical lectures contain some new ways of determining the areas and tangents of curves. The latter is solved by a rule exactly analogous to the procedure of the differential calculus, except that a separate determination of what is really a differential coefficient has to be made for every curve to which it was applied.'—W. W. R. Ball.

According to the preface NEWTON revised and corrected the work and added matter of his own.

BARTON (Benjamin Smith, M.D.)—v. AMERICAN PHILOSOPHICAL SOCIETY, No. 3.

- 1687 **BARTON** (Edwin Henry, Prof. Experimental Physics, Nottingham) TEXT-BOOK on SOUND, with 112 illustrations, large cr. 8vo. cl., t. e. g., 6s 6d (p. 10s nett) 1908

'The various typical musical instruments are discussed more fully than usual.'—Preface.

V. PHYSICS, continued:—

- 1689 **BARTHOLINUS** (*Brasmas*; *Prof. Mathematics, Copenhagen*) EXPERIMENTA CRYSTALLI ISLANDICI disdiaclassici, quibus mira et insolita REFRACTIO detegitur; with emblematic engraving on title, and numerous diagrams, sm. 4to. (pp. iv + 60), sewn (LARGE AND VERY CLEAN COPY); rare, £1. 10s
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First containing the author's discovery of double refraction in Iceland spar, which was the first recorded observation of double refraction. He did not however observe the phenomenon of polarisation.
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- 1693 ——— ANOTHER COPY, with the Supplement, 2 vols. 8vo. in 1, cl., 12s 6d
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- 1695 ——— REVISED ACCOUNT of the EXPERIMENTS with the BASHFORTH CHRONOGRAPH to find the Resistance of Air to the Motion of Projectiles, with Application of the Results to the Calculation of Trajectories according to J. BERNOULLI's Method, with the two Supplements, 3 vols. 8vo. cl. (Supps. sewn); partly o. p., 10s (p. 15s 6d nett)
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- 1696 **BASSET** (*Alfred Barnard, Lincoln's Inn, F.R.S.*) ELEMENTARY TREATISE on HYDRODYNAMICS and SOUND, with diagrams, 8vo. cl., 3s 6d (p. 7s 6d)
Cambridge, 1890
- 1697 ——— TREATISE on HYDRODYNAMICS, with numerous Examples, with diagrams, 2 vols. 8vo. cl. (o. p.), 15s
ibidem, 1888
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- 1698 ——— TREATISE on PHYSICAL OPTICS, with diagrams, 8vo. cl. (o. p.), 16s
ib., 1892
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[col.] Torino, Stamperia Reale, 1772
- 1703 ——— ANOTHER COPY; also: NUOVI SPERIMENTI per confermare, ed estendere la MECCANICA del FUOCO ELETTRICO; with engraving: Della ELETTRICITA TERRESTRE ATMOSFERICA à CIELO SERENO—3 vols. 4to. in 1, hf. Italian vellum gilt, £1. 7s 6d
ibidem, 1772-80-75
- 1704 ——— TREATISE upon ARTIFICIAL ELECTRICITY, giving Solutions of a Number of interesting ELECTRIC PHENOMENA, HITHERTO UNEXPLAINED, with Essay on the MILD and SLOW ELECTRICITY prevailing in the ATMOSPHERE during serene Weather, translated from the Italian, with 11 folding plates, roy. 4to. boards, uncut, with auto. of William Peckitt (glass-painter); RARE, £1. 10s
1776
The author's most important work, in which he explains and enlarges Franklin's theory of electricity by a number of interesting experiments. He was also the first to notice the phenomenon known as Electric Distillation, and his chapters on atmospheric electricity are specially important.
The above copy is interesting from its ownership by WILLIAM PECKITT, the York glass-painter of praiseworthy aspiration but horrible achievement, some of whose productions still exist in the Minster and at New College, Oxford.
- 1705 **BECQUEREL** (*Alexandre Edmond, de l'Institut; F.R.S.*) La LUMIÈRE: ses Causes et ses Effets; with 8 plates (mostly coloured), and numerous woodcuts, 2 vols. roy. 8vo. hf. green morocco gilt (SCARCE), £1. 10s
F. Didot, 1867-8
The author's best-known work, containing his important researches on phosphorescence and the chemical effect of light, and including his pioneer work in colour-photography.
- 1706 **BECQUEREL** (*Antoine César, de l'Institut, F.R.S.*) TRAITÉ EXPÉRIMENTAL de l'ÉLECTRICITÉ et du MAGNÉTISME, et de leurs Rapports avec les Phénomènes Naturels; with 17 folding plates, 6 vols. 8vo. hf. calf gilt, 10s 6d
1834-40
Containing the results of the author's important discoveries in electricity and magnetism, e.g. electrical endosmosis. The above work is quite distinct from the author's *Traité d'Électricité*, published in 3 vols. in 1855-6.
- 1707 **BEER** (*August; Univ. Bonn*) EINLEITUNG in die HÖHERE OPTIK; 2. [letzte] umgearbeitete Auflage von VIKTOR V. LANG; with plate and 201 woodcuts, 8vo. sewn, 3s 6d (p. M. 9)
Braunschweig, 1882
- The author was the propounder of the law (named after him) on the absorption of light in coloured solutions.
- 1708 **BÉLANGER** (*Jean Baptiste*) TRAITÉ de CINÉMATIQUE; with 5 folding plates, large post 8vo. buckram (o. p.), 5s
1864

V. PHYSICS, continued:—

- 1710 **BENJAMIN** (Park, PH.D., M. Amer. I.E.E.) *THE INTELLECTUAL RISE IN ELECTRICITY, with etched portraits (of Gilbert, Guericke, and Franklin), and 27 fs. illustrations from rare works*, 8vo. cl. (o. p.), 10s 6d (p. £1. 1s) 1895
An interesting history of electrical science from the earliest times to Benjamin Franklin, by an eminent American patent lawyer.
- 1711 **BENNET** (Abraham, Curate of Wirksworth, F.R.S.) *NEW EXPERIMENTS ON ELECTRICITY, wherein the CAUSES OF THUNDER and LIGHTNING, as well as the constant State of Positive or Negative Electricity in the Air or Clouds, are explained; with EXPERIMENTS ON CLOUDS of POWDERS and VAPOURS artificially diffused in the Air; also DESCRIPTION of a DOUBLER of ELECTRICITY, and of the most sensible ELECTROMETER yet constructed; with other New Experiments and Discoveries, 4 folding plates on copper*, 8vo. *contemporary calf, with bookplate of Lord Willoughby de Broke* (NICE COPY); VERY SCARCE, £1. 10s Derby, 1789
The author discovered the principle of doubling in electricity, by which the difference of potential between two conductors is indefinitely increased, and which was immediately utilised by Nicholson in the invention of his 'revolving doubler'; while he will always be known as the inventor of an electrical instrument still in daily use—the gold-leaf electroscope. Yet no record whatever of him is found in D. N. B.
- 1712 **BENZENBERG** (Johann Friedrich) *VERSUCHE über das GESETZ des FALLS, über den WIDERSTAND der LUFT und über die UMDREHUNG der ERDE, nebst der Geschichte aller früheren Versuche von GALILÄI bis auf GUGLIELMINI; with vignette and 8 copperplates*, 8vo. *original boards* (NICE COPY); VERY RARE, £1. 15s Dortmund, 1804
The most important of the author's writings, wherein he first proved that every body dropped from a great height fell in an Easterly direction, owing to the earth's revolution round its axis, the objects above the earth's surface describing a greater curve, and thus having a greater momentum. He also showed that falling bodies have besides a small Southerly displacement, for which no satisfactory explanation has yet been given. His experiments—based on a suggestion made by Sir Isaac Newton, and previously unsuccessfully attempted by Hooke and Guglielmini—were made from the top of the 'Michaelisturm' of Hamburg, covering a height of 285 feet, and were of great importance as conclusively proving the earth's rotation.
The author would be horrified to think that the theory of falling bodies was now the great study of German airmen for their raids on women and children in civilian towns.
- 1713 **BERNOULLI** (Daniel; F.R.S., *Univ. Basel, son of Jean Bernoulli*) *HYDRODYNAMICA, sive de Viribus et Motibus Fluidorum Commentarii; with 12 plates, 4to. boards*, 10s Argentorati, 1738
This work investigates many hydrodynamic problems of great importance, the results of which may be said to have given the science of hydrodynamics its present form. Among others it first develops a theory of hydraulic pressure, expanded later by Corioli, Navier, and Weisbach.
His chief work . . . It resembles Lagrange's *Mécanique analytique* in being arranged so that all the results are consequences of a single principle, namely, in this case, the conservation of energy.—W. W. R. Ball.
- 1714 **BERTRAND** (Joseph Louis François, *de l'Institut*) *LEÇONS sur la THÉORIE MATHÉMATIQUE de l'ÉLECTRICITÉ, professées au Collège de France; with 52 diagrams*, roy. 8vo. hf. maroon morocco, cl. sides, uncut, t. e. g. (as good as new), 7s 6d 1890
- 1715 ——— *THERMODYNAMIQUE; with diagrams*, roy. 8vo. hf. morocco neat, 6s (p. F. 11 nett sewn) 1887
- 1716 ——— *ANOTHER COPY, hf. maroon morocco gilt, cl. sides (fine copy)*, 7s
- 1717 **BESANT** (The late William Henry, F.R.S.; brother of Sir Walter) *ELEMENTARY HYDROSTATICS, with Chapters on the Motion of Fluids and of Sound, with diagrams; with the Solutions*, 2 vols. cr. 8vo. in 1, buckram, 5s (p. 3s 6d nett) 1900-1899
- 1718 ———, and Arthur Stanley **RAMSEY**, *Magdalene Coll., Cantab.: TREATISE ON HYDRO-MECHANICS (Vol. I 6th Edition), with numerous diagrams*, 2 vols. 8vo. cl., 11s (p. 16s 6d nett) 1904-13
- 1719 **BILLET** (Félix) *TRAITÉ d'OPTIQUE PHYSIQUE; with 14 plates, 2 vols. 8vo. hf. calf (joints weak), with early auto. of Lord Justice Stirling, F.R.S., 5s (p. F. 15 nett unbound)* 1858-9
- 1720 **BOHNENBERGER** (Gottlieb Christian, *Pfarrer zu Simmozheim*) *BESCHREIBUNG einer auf eine neue sehr bequeme Art eingerichteten ELEKTRISIR-MASCHINE, nebst einer NEUEN ERFINDUNG, die ELEKTRISCHEN FLASCHEN und BATTERIEN betreffend; with 6 folding plates of the author's machine, etc.*, large 12mo. (pp. 80), sewn (BARE), 15s Stuttgart, 1784
The writer was the father of J. G. F. v. Bohnenberger, the inventor of the pendulum of reversion, and is best known for improving Bennet's duplicator (v. No. 1711 ante).
- 1721 **BOIS** (Heinrich du; *Univ. Berlin*) *MAGNETISCHE KREISE, deren Theorie und Anwendung; with 94 illustrations, large post 8vo. cl., 5s (p. M. 10)* Berlin, 1894
Containing an account of the author's magneto-optical method for the measurement of permeability.
- 1722 **BOLTZMANN** (Ludwig, *Univ. Munich, F.R.S.*) *VORLESUNGEN über MAXWELLS THEORIE der ELEKTRICITÄT und des LICHTES; with 4 plates and numerous diagrams, original issue*, 2 vols. 8vo. sewn, 7s (p. M. 10) Leipzig, 1891-3
- 1723 ——— *I. THEIL: Ableitung der Grundgleichungen für ruhende, homogene, isotrope Körper; with 2 plates and 26 diagrams*, 8vo. hf. German morocco, 4s (p. M. 6) *ibidem*, 1891
- 1724 ——— *LEÇONS sur la THÉORIE des GAZ, traduites par A. GALLOTTI et H. BÉNARD, avec Introduction et Notes par M. BRILLOUIN*, 2 vols. roy. 8vo. sewn, 10s (p. F. 19.80 nett) 1902-5
A standard work on the kinetic theory of gases by one of its perfectors.
- 1725 **BOUSSAË** (Henri, *Univ. Toulouse*) *COURS de PHYSIQUE, conforme aux Programmes des Certificats et de l'Aggrégation de Physique; with numerous illustrations*, 6 vols. roy. 8vo. in 5, buckram, £2. (p. F. 73 nett sewn) [1907-9]
- CONTENTS:—I. Mécanique physique: II. Thermodynamique. Théorie des Ions: III. Électricité et Magnétisme: IV. Optique. Étude des Instruments: V. Electroptique. Ondes hertziennes: VI. Étude des Symétries.
- 1726 **BOUCHARLAT** (Jean Louis) *ÉLÉMENTS de MÉCANIQUE, 4^e [dernière] Édition; with 10 folding plates, large post 8vo. hf. black morocco neat, cl. sides (as good as new), 4s 6d* 1861
- 1727 **BOULANGER** (A.) *HYDRAULIQUE GÉNÉRALE: Principes et Problèmes fondamentaux. Problèmes à Singularités et Applications; with 27 illustrations*, 2 vols. cr. 8vo. cl., 5s 6d (p. F. 11 nett) 1909

V. PHYSICS, continued:—

- 1728 **BOSCOVICH** (Ruggiero Giuseppe, S.J.; *Prof. Mathematicæ, Collegio Romano*; F.R.S.) *DISERTATIONES V ad DIOPTRICAM pertinentes*; 4 plates, 4to. mottled vellum, 8s 6d *Vindobonæ*, 1767
Applying mathematics to the theory of the telescope.
- 1729 ——— *MEMOIRE sulle CANNOCCHIALI DIOTTRICI*; with folding plate, 8vo. boards, uncut (rare), 10s 6d *Milano*, 1771
Donnant une idée des lunettes à la portée de tout le monde, et l'explication la plus simple des formules qui expriment les dimensions des lunettes acromatiques afin que tous les ouvriers puissent en faire.—*Montucla-Lalande*.
- 1730 ——— *PHILOSOPHIE NATURALIS THEORIA*, redacta ad UNICAM LEGEM VIRIUM in Natura existentium; with 4 plates, 4to. boards, uncut (RARE), £1. 10s *Viennæ Austriæ*, 1759
LORD KELVIN'S COPY:
- 1731 ——— *EDITIO [NOVA ET] VENETA PRIMA*, nunc ab ipso Auctore perpolitata et aucta, ac a plurimis præcedentium Editionum Mendis expurgata; with 4 plates, 4to. fine copy in contemporary Italian tree-calf gilt, with Lord Kelvin's bookplate (rare), £2. 2s *Venetis*, 1763
This work contains the author's conception of atoms: a system of points, which are mere centres of force (the force being a function of the distance), attracting or repelling each other. His theory, though quite superseded by Dalton's, is still suggestive, especially in connexion with the Electron Theory.
- 1732 **BOUGUER** (Pierre; F.R.S.) *ESSAI d'OPTIQUE*, sur la GRADATION de la LUMIÈRE, première édition; with 3 folding plates, 12mo. old calf gilt (RARE), with auto. of General William Mudge, R.E., F.R.S., of the Ordnance Survey, £1. 5s 1729
- 1733 ——— *ANOTHER COPY*, large 12mo. fine copy in contemporary calf extra, £1. 7s 6d
In this work the author laid the foundation of rational photometry, while it also contains important investigations on the absorption of light. His views were enlarged in the *Traité d'Optique*.
- 1734 ——— *TRAITÉ d'OPTIQUE sur la GRADATION de la LUMIÈRE*. Ouvrage posthume, publié par l'Abbé N. L. DE LA CAILLE; 7 folding plates, 4to. contemporary French hf. calf (RARE), £1. 5s 1760
- 1735 ——— *ANOTHER COPY*, contemporary French mottled calf gilt, £1. 7s 6d
His investigations concerning the intensity of light laid the foundation of photometry; their results were fully embodied in his *Traité d'Optique* (1760).
- 1736 **BOUSSINESQ** (Joseph; *de l'Institut*; *Sorbonne*) *APPLICATION des POTENTIELS à l'Étude de l'ÉQUILIBRE et du MOUVEMENT des SOLIDES ÉLASTIQUES*, principalement au Calcul des Déformations et des Pressions que produisent, dans ces Solides, des Efforts quelconques exercés sur une petite Partie de leur Surface ou de leur Intérieur, avec de Notes étendues sur divers Points de Physique mathématique et d'Analyse, large impl. 8vo. (pp. 722), hf. morocco, cl. sides (SCARCE), £1. 1s 1885
A standard work, and 'the most considerable contribution of Boussinesq to the theory of elasticity.'—*Todhunter and Pearson's History of the Theory of Elasticity*.
- *ESSAI sur l'ÉQUILIBRE des MASSIFS PULVÉRULENTS* (1876)—v. POISSON, post.
- 1737 ——— *LEÇONS SYNTHÉTIQUES de MÉCANIQUE GÉNÉRALE*, publiées par MM. LEGAY et VIGNERON, roy. 8vo. buckram, uncut, t. e. g. (o. p.), 4s 1889
- 1738 ———, et Adhémar Jean Claude Barré de SAINT-VENANT, *de l'Institut*: *MÉMOIRES divers de PHYSIQUE MATHÉMATIQUE*; with diagrams, 17 parts in one vol. 4to. cl., with MS. List of Contents by Lord Justice Stirling, F.R.S., 15s 1847-80
——— v. SCIENTIFIC THESIS, No. 395.
- 1739 **BRAUER** (Ernst; *Technische Hochschule, Karlsruhe*) *THE CONSTRUCTION of the BALANCE*, according to the underlying scientific Principles and its special Purpose; 3rd completely revised Edition by FR. LAWACZECK, translated by HENRY CHARLES WALTERS, with 246 illustrations (including folding plates), 8vo. original hf. morocco neat, cl. sides (nice copy), 12s 1909
Privately printed for the Incorporated Society of Inspectors of Weights and Measures. The above was a presentation copy from the Society (with letter) to Sir Laurence Gomme, to whom the translation is dedicated.
- 1740 **BREWSTER** (Sir David, F.R.S.) *THE STEREOSCOPE: its History, Theory, Construction, and Application to the Fine and Useful Arts, and to Education*, first edition, with 52 woodcuts and diagrams, post 8vo. cl., 7s 6d 1856
- 1741 ——— *ANOTHER COPY*, cl. (fresh copy); with LETTERS addressed by PROF. WHEATSTONE and SIR DAVID BREWSTER to 'The Times' respecting the ORIGINAL INVENTION of the STEREOSCOPE, roy. 8vo. (pp. 7), sewn—2 vols., with auto. of P. M. Roget, F.R.S., 10s 6d
- 1742 ——— *REPRINT, with vignette portrait and 52 woodcuts and diagrams*, post 8vo. cl., 5s 1870
Containing the author's discovery of the lenticular stereoscope, which is still in use, and formed an improvement on Wheatstone's earlier discovery of the reflecting one.
- 1743 ——— *TREATISE on the KALEIDOSCOPE*, only edition, with 7 plates, post 8vo. boards, uncut, 7s 6d *Edin.*, 1819
The first printed account of the kaleidoscope, the author's own invention. It was duly patented by him, but owing to 'some defect in its registration, it was quickly pirated, and he never realised anything by it.'—*D. N. B.*
- 1744 ——— *TREATISE on OPTICS*, new Edition, with vignette by Finden, and 239 woodcuts, fcap. 8vo. cl., 3s 6d 1853
A volume in which every phenomenon connected with catoptrics or dioptrics known up to the time of publication was described with remarkable clearness and precision.—*D. N. B.*
——— v. SCIENTIFIC MEMOIRS, No. 394.
- 1745 **BRILLOUIN** (Marcel, *Collège de France*) *PROPAGATION de l'ÉLECTRICITÉ: Histoire et Théorie*; 4 folding plates and numerous text-illustrations, roy. 8vo. sewn, 8s (p. F. 16.50 nett) 1904
——— v. BOLTZMANN, ante.
- 1746 **BRIOT** (Charles Augustus Albert; *Sorbonne*) *ESSAIS sur la THÉORIE MATHÉMATIQUE de la LUMIÈRE*; with diagrams: *THÉORIE MÉCANIQUE de la CHALEUR*; with diagrams—2 vols. 8vo. in 1, hf. calf neat (scarce), 10s 1869-4
- 1747 ——— *THÉORIE MÉCANIQUE de la CHALEUR*, 2^e Édition par E. MASCART; with diagrams, 8vo. sewn, 4s (p. F. 8.25 nett) 1883

V. PHYSICS, continued:—

BOUTY (Edmond; *Prof. Physics, Sorbonne*) THÉORIE des PHÉNOMÈNES ÉLECTRIQUES—v. CLAUDIUS, *post.*

- 1749 **BOYLE** (Hon. Robert; F.R.S.; *founder of the Boyle Lectures*) EXPERIMENTA & OBSERVATIONES PHYSICÆ: wherein are briefly treated of several Subjects relating to NATURAL PHILOSOPHY in an EXPERIMENTAL WAY, with a small COLLECTION of STRANGE REPORTS, first edition, sm. 8vo. *large copy in contemporary sheep (very rare)*, 17s 6d John Taylor, 1691

THE LAST WORK published by the author, and including 'Chymico-Magetical Experiments and Observations'. The 'Strange Reports' consist of remarkably strange stories, illustrating an amazing credulity remarkable in a man of so true a scientific temper.

- 1750 — ANOTHER COPY, with MEDICINA HYDROSTATICA: or, Hydrostaticks applied to the Materia Medica, shewing how by Weight that divers Bodies, us'd in Physick, have in Water; one may discover whether they be Genuine or Adulterate; with a previous Hydrostatical Way of estimating ORES, with *frontispiece of balance*: CATALOGUE of the PHILOSOPHICAL WORKS and TRACTS written by the HON. ROBERT BOYLE, 3 vols. sm. 8vo. in 1, *old calf* (FINE COPY), £1. 10s 1691-0
- 1751 — EXPERIMENTS and CONSIDERATIONS touching COLOURS, first occasionally Written, among some other Essays, to a Friend; and now suffer'd to come abroad as the Beginning of an EXPERIMENTAL HISTORY of COLOURS, first edition, with *folding plate*, 12mo. *sound copy in the original sheep (back slightly damaged)*, 15s H. Herringman, 1664

'Describing for the first time the iridescence of metallic films and soap-bubbles.'—D. N. B.

It contains many interesting observations and axioms, which were completed three years afterwards by Newton in his 'Optics'. The work also contains many recipes for mixing colours. Pp. 389-423 contain a 'Short Account of some Observations about a Diamond that shines in the Dark, with a Treatise upon the score of the Affinity betwixt Light and Colours', with a separate titlepage.

- 1752 — HYDROSTATICAL PARADOXES, made out by NEW EXPERIMENTS (for the most part PHYSICAL and Easie), first edition, with 3 *folding plates on copper*, 12mo. *sound copy in contemporary calf (rare)*, 16s Oxford, R. Davis, 1666

- 1753 — ANOTHER COPY, *old calf, newly rebaked*, 15s

'Enforcing, by numerous and striking experiments, the laws of fluid equilibrium.'—D. N. B. The author also demonstrates the impossibility of the 'fuga vacui.'

- 1754 — NEW EXPERIMENTS PHYSICO-MECHANICAL, touching the SPRING of the AIR, and its Effects (made, for the most Part, in a NEW PNEUMATICAL ENGINE); SECOND EDITION, whereunto is added a DEFENCE of the Author's Explication of the Experiments, against the OBJECTIONS of FRANCISCUS LINUS, and THOMAS HOBBS, sm. 4to. *old calf, newly rebaked (wanting the plates); very rare*, 17s 6d Oxford, H. Hall, 1662

- 1755 — ANOTHER COPY OF THE SECOND EDITION, with the two copperplates (one *folding*); and the CONTINUATION of NEW EXPERIMENTS [as described in the next article], first edition, with 8 plates—2 vols. sm. 4to. in 1, *contemporary calf (a few ll. slightly wormed, otherwise a VERY FINE COPY)*, with *old auto.* 'J. DIGBY' on title, £2. 10s *ibidem, apud eundem*, 1662-9

Containing the author's invention of an improved air-pump ('machina Boyleana'), 'presenting all the essential qualities of the modern machine. By a multitude of experiments performed with it, Boyle vividly illustrated the effects (at that time very imperfectly recognised) of the elasticity, compressibility, and weight of the air; investigated its function in respiration, combustion, and conveyance of sound, and exploded the obscure notion of a fuga vacui.'—Miss Agnes M. Clerke.

The above second edition is of special importance, as it first contains what is now known as Boyle's Law. 'The Defence against Linus' contained experimental proof of the proportional relation between elasticity and pressure, still known as Boyle's Law. This approximately true principle, although loosely demonstrated, was at once generalised and accepted, and was confirmed by MARIOTTE [under whose name it is generally known on the Continent] in 1676.—Eadem.

BISHOP BURNET'S COPY:

- 1756 — CONTINUATION of NEW EXPERIMENTS, PHYSICO-MECHANICAL, touching the SPRING and WEIGHT of the AIR, and their Effects. The I. Part, with a short DISCOURSE of the ATMOSPHERES of CONSISTENT BODIES, first edition, with 8 *fine plates on copper*, sm. 4to. *contemporary calf (sound and large copy)*; RARE, with *armorial bookplate of GILBERT BURNET as Bp. of Sarum*, £1. 1s *ib., a. e.*, 1669

Specially valuable for giving a description of his air-pump as improved by ROBERT HOOKE, F.R.S., the author's assistant—spoken of as the 'second Engine' in this work.

- 1757 — TRACTS containing New Experiments, touching the RELATION betwixt FLAME and AIR. And about EXPLOSIONS. An HYDROSTATICAL DISCOURSE occasion'd by some Objections of DR. HENRY MORE against some Explications of New Experiments made by the Author, with an Hydrostatical Letter, elucidating an Experiment about a Way of Weighing Water in Water. New Experiments of the POSITIVE and RELATIVE LEVITY of BODIES under Water, of the Air's Spring on Bodies under Water, and about the Differing Pressure of Heavy Solids and Fluids, first edition, large 12mo. *old calf, or, old sheep*, 12s 6d R. Davis, 1672 or '73

Containing the author's important investigations on specific gravity.

It includes chapters 'Of the Difficulty of producing and preserving Flame without Air', 'Of the Propagation of Actual Flame in Vacuo Boyleano', 'New Experiments about the Relation betwixt Air and the Flamma Vitalis of Animals', 'Of the Pressure of the Air's Spring on Bodies under Water', etc. etc.

- 1758 [—] TRACTS consisting of OBSERVATIONS about the SALTNESSE of the SEA: ACCOUNT of the STATICAL HYGROSCOPE and its Uses; the FORCE of the AIR'S MOISTURE; the Natural and Preternatural State of Bodies, and a Sceptical Dialogue about the POSITIVE or PRIVATIVE NATURE of COLD, with some Experiments, by a MEMBER of the ROYAL SOCIETY, first edition, sm. 8vo. *old sheep, newly rebaked*, 14s E. Flesher, 1674

- 1759 [—] SECOND EDITION, sm. 8vo. *original sheep*, 10s S. Smith, 1690

Describing some of the author's most interesting investigations, and exploding the Aristotelian doctrine then held that the saltiness of the sea was found only on its surface. He also explains the origin of the salts of the sea, shows how to make sea water drinkable by distillation and freezing, and ascertains its density.

Robert Boyle is one more example of our national aptitude for original discovery, from Roger Bacon or William Gilbert downwards, of which English Teutolaters decanal and otherwise are doubtless unaware.

V. PHYSICS, *continued* :—

- 1761 **BRISSE (Charles), et Charles ANDRÉ**: COURS DE PHYSIQUE à l'Usage de la Classe de Mathématiques spéciales, 3^e [dernière] Édition par CH. BRISSE et CH. RIVIERE; with *coloured spectrum plate and 562 woodcuts*, 8vo. *hf. pigskin neat, cl. sides*, 7s 6d (p. F. 16.50 nett sewn) 1894
- 1762 **BROWN (Hugh)** THE TRUE PRINCIPLES OF GUNNERY investigated and explained, comprehending Translations of EULER'S OBSERVATIONS on the New Principles of Gunnery by BENJAMIN ROBINS, F.R.S., and the latter's DISCOURSE on the TRACK described by a BODY in a RESISTING MEDIUM, with necessary Explanations and Remarks, also TABLES calculated for Practice, with the Method of solving that capital Problem, which requires the Elevation for the greatest Range with any given initial Velocity, with 5 plates, 4to. *new hf. calf gilt, with AUTO. OF GEN. ROBERT MELVILLE*, 1782; F.R.S., *inventor of a naval gun, on flyleaf (RARE)*, 18s 6d 1777
A republication of Robins's classic work, containing the invention of the ballistic pendulum, with Euler's valuable notes, and remarks, and useful tables by the editor. It was published by order of the Board of Ordnance.
- 1763 **BURBURY (Samuel Hawksley, F.R.S., St. John's Coll., Cantab.)** TREATISE on the KINETIC THEORY OF GASES, with diagrams, 8vo. *cl.*, 5s (p. 8s nett) Univ. Press, Cambridge, 1899
'My object is to apply to the Kinetic Theory of Gases a method of analysis different from that generally employed'.—Preface.
- v. PHYSICAL PAPERS, *post*.
- 1764 **CABEO (Niccolo, S.J.)** PHILOSOPHIA MAGNETICA, in qua MAGNETIS NATURA penitus explicatur, et omnium quæ hoc Lapide cernuntur, Causæ propriæ afferuntur. Nova etiam Pyxis constructitur, quæ PROPRIAM POLI ELEVATIONEM, cum suo MERIDIANO, ubique demonstrat. Multa quoque dicuntur de ELECTRICIS, et aliis ATTRACTIONIBUS, et eorum Causis; with *engraved title, and numerous woodcuts and diagrams*, folio, *old hf. calf (slightly water-stained, and last l. of Index in MS., otherwise a LARGE AND VERY SOUND AND CLEAN COPY)*; RARE, £1. 12s 6d Colonia, 1629
The first important work on electricity that appeared after GILBERT's *de Magnete* (q. v. *post*), and, although re-stating many facts contained in that work, including a number of original investigations.
- 1765 **CAMPBELL (Norman Robert, Univ. Leeds)** MODERN ELECTRICAL THEORY, with diagrams, 8vo. *cl.*, 4s (p. 7s 6d nett) Univ. Press, Cambridge, 1907
An unusually clear exposition of the electron theory.
- 1766 — SECOND EDITION, 8vo. *cl.*, 6s 6d (p. 9s nett) apud eandem, ibidem, 1913
'This volume, nominally a second edition, is really a new book'.—Preface.
- 1767 **CARDANO (Girolamo, M.D.; Prof. Mathematics, Milan)** DE RERUM VARIETATE Libri XVII, adjectus est Caput, Rerum et Sententiarum notatu dignissimarum Index, editio princeps; with *portrait on title and numerous other woodcuts*, folio, *old white vellum (some ll. water-stained, otherwise a LARGE AND FINE COPY)*; RARE, £2. 2s [col.]: Basilee, per Henrichum Petri, 1557
THE RARE FIRST EDITION of *de Rerum Varietate*, and, according to Graesse, 'la seule qui n'ait pas été mutilée'.
- 1768 — EDITIO SECUNDA, a prima Editione ab ipso denuò Authore recognita, ac pluribus Locis locupletata, infinitisque Mendis repurgata; accessit INDEX amplissimus; with *plates, and numerous woodcuts and diagrams*, thick 12mo. *old vellum (52 ll. in neatly written MS., a number of ll. water-stained, and a few mended)*, 10s 6d Avinione, 1558
This edition is sometimes preferred to that of 1557. The work forms a sequel to *de Subtilitate*, and, together with it, contains the author's notions on physics and metaphysics. 'The chief interest of the work consists in the hints and glimpses it affords of principles beyond the full comprehension of the writer himself. The inorganic realm of Nature he asserts to be animated no less than the organic. The indefinite variability of species is implied,' etc. etc. etc.—*Ency. Brit.*
- 1769 — DE SUBTILITATE Libri XXI, nunc demum recogniti atque perfecti; with *fine portrait on reverse of title, and numerous other woodcuts and diagrams*, folio, *calf extra, g. e., by Bradel, succr. de Derome (back of binding slightly rubbed, otherwise a VERY FINE AND TALL COPY)*; VERY RARE, £2. 2s Basilee, 1554
SECOND ORIGINAL EDITION, greatly enlarged and wholly rewritten. It is beautifully printed in a large Roman type, and contains for the first time the celebrated proposition: *Igitur his arbitrio victoria relictis*, which caused his accusation of heresy, and was left out in the third original edition of 1560. The above is moreover an unusual issue of the second edition, containing neither List of Errata nor colophon on the last l., forming part of nearly all copies of the above edition.
- Among other important physical investigations, it contains the first description of a flour-sifting machine, and mentions the sifting property of undulating air—a fact only rediscovered and made use of within recent times by F. G. Winkler.
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- 1907 ——— EXPERIENCES et OBSERVATIONS SUR L'ÉLECTRICITÉ faites à Philadelphie en Amérique, traduites [avec Avertissement (pp. 28) et Histoire abrégée de l'Électricité (pp. 90)] par THOMAS FRANÇOIS DALIBARD, 2^e Édition, augmentée d'un Supplément considérable de l'Auteur, avec des Notes et des Expériences nouvelles; with 2 plates, 2 vols. 12mo. contemporary French hf. calf gilt, 12s 6d 1756
The history of electricity prefixed to this edition has not been published in any other form.
- v. AMERICAN PHILOSOPHICAL SOCIETY, No. 3, and MANCHESTER LITERARY and PHILOSOPHICAL SOCIETY, No. 127.
- 1908 **FRANKLIN** (William Suddards, *Lehigh Univ.*) ELECTRIC WAVES: an Advanced Treatise on Alternating-Current Theory, with numerous illustrations, 8vo. cl., 7s (p. 12s 6d nett) New York, 1909
- 1909 ———, and Barry **MACNUTT**: The ELEMENTS OF ELECTRICITY and MAGNETISM, with portrait of Faraday and numerous illustrations, 8vo. cl., 4s (p. 7s nett) ibidem, 1909
- 1910 ———: The ELEMENTS OF MECHANICS; with frontispiece and numerous illustrations, 8vo. cl., 3s 6d (p. 6s 6d nett) ib., 1907
- 1911 ———: LIGHT and SOUND, with numerous illustrations, 8vo. cl., 4s (p. 7s nett) ib., 1909
- 1912 ———, and R. B. **WILLIAMSON**: The ELEMENTS OF ALTERNATING CURRENTS, 2nd Edition, rewritten and enlarged, with 250 illustrations, 8vo. cl., 6s (p. 10s 6d nett) ib., 1904, or '9
- 1913 **FUHRMANN** (Arwed, *Dresden*) AUFGABEN aus der ANALYTISCHEN MECHANIK: Übungsbuch und Literaturnachweis, 3. und 2. [neueste] vermehrte Auflage; with diagrams, 2 vols. 8vo. cl., 4s 6d (p. M. 7.80) Leipzig, 1904-1882
- 1914 **GALILEI** (Galileo) DISCORSI e DIMOSTRAZIONI MATEMATICHE, intorno à DUE NUOVE SCIENZE attenenti alla MECANICA & i MOVIMENTI LOCALI, con una Appendice del Centro di Gravità d'alcuni Solidi, prima edizione; with numerous fine woodcuts and diagrams, sm. 4to. old calf, rebaked (small blank portion cut off title), with auto. 'W. Milton, 1795' on title (VERY RARE), £2. 10s Leida, appresso gli Elsevirii, 1638
- 1915 ——— ANOTHER COPY, contemporary limp Italian vellum (FINE AND LARGE COPY), £3. 3s
First Edition of one of the author's most important works, which did as much to lay the foundation of dynamics as Stevinus's *Beghinselen* (q. v. post) did that of statics, and containing the first law of motion, his laws of falling bodies (the result of experiments made from the Leaning Tower of Pisa between 1602 and 1604), demonstrating the accelerated fall, the parabolic curves of projectiles, hitherto believed to move in a straight line and suddenly fall vertically to the ground, the laws of cohesion, and of the pendulum, a correct definition of momentum, etc. etc. etc.
- 1916 **GEHLER** (Johann Samuel Traugott) PHYSIKALISCHES WÖRTERBUCH, neu bearbeitet von BRANDES, GMELIN, HORNER, MUNCKE, und PFAFF, mit REGISTER, 11 vols. 8vo. in 23, and Atlas, containing numerous copperplates, 4to.—in all 24 vols. contemporary hf. German calf gilt (sound copy), £1. 1s (p. M. 217) Leipzig, 1825-45
Still valuable in connexion with the history of natural science.

V. PHYSICS, *continued* :—

- 1918 **GALVANI** (Luigi; *Prof. Anatomy, Bologna*) OPERE EDITE ed INEDITE, raccolte e pubblicate per Cura dell' Accademia delle Scienze dell' Istituto di Bologna [con Rapporto suoi MSS. ed Elogio (pp. 119) da GIUSEPPE VENTUROLI]; with *fine portrait*, 9 *folding plates*, and *fs.*: AGGIUNTA [Nuove Notizie, Illustrazioni e Difese, da SILVESTRO GHERARDI]—2 vols. roy. 4to. in 1, *hf. calf gilt (fine copy)*, £1. 1s
Bologna, 1841-2
- 1919 — ANOTHER COPY, *sewn, uncut*, 18s
Comprising his celebrated *De Viribus Electricitatis in Motu Musculari*, containing the discovery of the electricity of contact, his *Usa ed Attività dell' Arco conduttore delle Contrazioni*, and his chemical and anatomical works.
- 1920 **GANOT** (Adolphe) ELEMENTARY TREATISE ON PHYSICS, Experimental and Applied, translated and edited by E. ATKINSON; 15th Edition, revised and enlarged, with 9 *coloured plates and maps*, and 1057 *woodcuts*, thick 8vo. *cl.*, *pencilled*, 5s (p. 15s)
1890
- 1921 **GAUSS** (Johann Carl Friedrich; *Prof. Mathematics, Göttingen*; F.R.S.) INTENSITAS VIS MAGNETICAE TERRESTRIS ad Mensuram absolutam revocata, impl. 8vo. (pp. 44), *sewn* (SCARCE), 10s 6d
Göttingae, 1833
The author's first paper on the theory of magnetism, and important for containing the first proposal of a system of absolute units in electricity. 'Gauss's use of absolute units in the measurement of terrestrial magnetism led WILHELM WEBER to introduce absolute units in electricity.'—*Professor Cajori*.
- RECHERCHES DIOPTRIQUES, traduites par A. BRAVAIS (1856)—v. OPTICAL PAPERS, *post*.
- 1922 **GEITLER** (Josef R. v.; *Univ. Prag*) ELEKTROMAGNETISCHE SCHWINGUNGEN UND WELLEN; with 86 *woodcuts*, 8vo. *cl.*, 3s 6d (p. M. 5.20)
Braunschweig, 1905
- 1923 **GELLIBRAND** (Henry; *Gresham Prof. Astronomy, Oxon.*) A DISCOURSE MATHEMATICALL on the VARIATION of the MAGNETICALL NEEDLE. Together with its admirable DIMINUTION lately discovered, etc., with *diagrams*, sm. 4to. (pp. 22), *sewn* (title wanting, and last l. badly stained and slightly defective); *very rare*, £1. 15s
W. Jones, 1635
The only edition published of this rare and important little work, which contains the discovery of the secular variation of the magnetic declination—a fact unknown to the author's biographer in D. N. B., who unjustly describes him as 'a plodding industrious mathematician without a spark of genius,' instead of a continuator of our national pioneer work in magnetism and electricity.
- 1924 **GIBBS** (Josiah Willard, *Prof. Mathematical Physics, Yale Univ.*) ELEMENTARY PRINCIPLES in STATISTICAL MECHANICS, developed with especial Reference to the rational Foundation of Thermodynamics, 8vo. *cl.* (*fresh copy*); o. p., 16s
New York, 1902
Based on the principle of conservation of probability of phase.
- SCIENTIFIC PAPERS, 2 vols.—v. No. 308.
- 1925 **GLAZEBROOK** (Sir Richard Tetley, F.R.S., *Director National Physical Laboratory*) ELECTRICITY and MAGNETISM, with 270 *woodcuts*, cr. 8vo. *cl.*, or, *buckram*, 3s (p. 7s 6d)
Univ. Press, Cambridge, 1903
- 1926 — PHYSICAL OPTICS, 4th Edition, with 183 *woodcuts*, cr. 8vo. *buckram*, 3s (p. 6s) 1898 or 1907
- 1927 —, and Sir William Napier SHAW, F.R.S., *Director, Meteorological Office*: PRACTICAL PHYSICS, 4th Edition [greatly enlarged], with 134 *woodcuts*, thick post 8vo. *cl.*, 3s 6d (p. 7s 6d)
1893
- v. ELECTRICAL PAPERS, *ante*, and OPTICAL PAPERS, *post*.
- 1928 **GLOSENER** (Michel, *Univ. Liège*) RECHERCHES sur la TÉLÉGRAPHIE ÉLECTRIQUE; with 15 *plates* (14 *folding*), large 8vo. *sewn*, with *author's inscr.* (*scarce*), 9s
Liège, 1853
'Contenant un exposé sommaire des nombreuses recherches que j'ai faites sur tous les systèmes de télégraphes électriques, à l'exception de celui qui a pour but l'impression à l'aide de lettres.'—Page 1.
- 1929 **GORDON** (James Edward Henry) PHYSICAL TREATISE ON ELECTRICITY and MAGNETISM, 3rd [last] Edition, with 73 *plates* (8 *coloured*), and 312 *woodcuts*, 2 vols. 8vo. *cl.*, 10s (p. £2. 2s) 1891
'Probably the best book of the kind that has ever been published in England.'—*Academy*. The author made original researches on electro-magnetic rotation of polarised light, and the specific inductive capacity of dielectrics.
- 1930 **GRAHAM** (Robert Hudson, C.E.) GRAPHIC and ANALYTIC STATICS in Theory and Comparison: their Practical Application to Stresses in Roofs, Solid Girders, etc.; with Chapter on WIND PRESSURES; numerous *plates* (3 *folding*), and *diagrams*, 8vo. *cl.*, 6s 6d (p. 16s)
1883
- 1931 **GRAHAM** (Thomas, F.R.S.) On the MOLECULAR MOBILITY of GASES, with 8 *woodcuts*, 4to. (pp. 21), *sewn*, 3s
1863
- 1932 — On OSMOTIC FORCE (Bakerian Lecture), with *woodcuts*, 4to. (pp. 52), *sewn* (*scarce*), 6s
1854
An important memoir in which the author distinguishes between positive and negative osmosis, and defines diosmosis.
- 1933 **GREEN** (George, *Fellow of Caius Coll.*) MATHEMATICAL PAPERS, edited by NORMAN MACLEOD FERRERS, pr., Master of Caius, original edition, 8vo. *cl.*, *uncut* (SCARCE), £1. 10s
1871
- 1934 — ANOTHER COPY, *cl.* (*fresh copy*), with *auto.* and *reference* by Lord Justice Stirling, F.R.S., £1. 12s 6d
Including his important 'Essay on the Application of Mathematical Analysis to the Theories of Electricity and Magnetism,' as well as papers on the motion of waves in a canal, and on the reflexion and refraction of sound and light. 'In the latter the geometrical laws of sound are deduced by the principle of energy from the undulatory theory, the phenomenon of total reflexion is explained physically, and certain properties of the vibrating medium are deduced. He also discusses the propagation of light in any crystalline medium.'—*W. W. R. Ball*.
- 1935 — ESSAY on the APPLICATION of MATHEMATICAL ANALYSIS to the THEORIES of ELECTRICITY, and MAGNETISM, first edition, 4to. FRESH COPY in the original paper cover, *uncut*, £1. 15s
Nottingham, printed for the author, by T. Wheelhouse, 1828
VERY SCARCE, only very few copies having been published by subscription. This important paper, which for the first time stated, and powerfully developed, the dynamical significance of the potential, lay neglected and forgotten for nearly 20 years, until Lord Kelvin called public attention to it. This circumstance probably contributed to its extreme scarcity.
'In this essay he first introduced the term 'potential' to denote the result obtained by adding the masses of all the particles of a system, each divided by its distance from a given point; and the properties of this function are first considered, and applied to the theories of magnetism and electricity.'—*D. N. B.*

V. PHYSICS, continued:—

GILBERT (Davies, M.P., P.R.S., F.S.A.) PRESENTATION COPIES OF SCIENTIFIC MEMOIRS—v. SCIENTIFIC MEMOIRS, No. 394.

- 1937 **GILBERT** (Philippe, Univ. LOUVAIN) MÉMOIRE sur l'APPLICATION de la MÉTHODE de LAGRANGE à divers Problèmes de MOUVEMENT RELATIF; with folding plate and diagrams, roy. 8vo. sewn, 4s
Bruxelles, 1884

A FINE COPY OF THE EXCESSIVELY RARE ORIGINAL EDITION:

- 1938 **GILBERT** (William, M.D., *Physician to Queen Elizabeth*): GVILIELMI GILBERTI Colcestrensis, Medici Londinensis, de MAGNETE, MAGNETICISQUE CORPORIBUS, et de MAGNO MAGNETE TELLURE; Physiologia noua, plurimis et Argumentis, et EXPERIMENTIS demonstrata, editio princeps; with vignette on obverse and arms on rev. of title, folding diagram, and numerous large woodcuts, folio, FINE COPY in modern hf. calf, £21. Londini, excudebat Petrus Short, 1600

FIRST EDITION of this monumental work, which gives England the glory of being the absolute birthplace of electrical science, and is 'one of the finest examples of inductive philosophy that has ever been presented to the world' (*Lord Kelvin*). It was the first great work on natural science ever printed in England, Roger Bacon's having been left in MS., and here and abroad at once exerted an enormous influence on the development of the newly-created science. It was so celebrated a hundred years after as to call forth Dryden's well-known lines

'Gilbert shall live till loadstones cease to draw,
Or British fleets the boundless ocean awe'.

The first edition is of well-known rarity. The late Professor Silvanus Thompson, F.R.S., writing on the work in the 'Electrician' of March 24, 1905, says, 'This book is much rarer than the first folio Shakespeare, for while of that work no fewer than 156 copies are known to exist, there are only 68 copies of the first folio Gilbert known, and only two have been sold in the book-auctions during the last twenty years.'

- 1939 — On the LOADSTONE and MAGNETIC BODIES, and on the GREAT MAGNET the EARTH: a New Physiology, demonstrated by many Arguments and Experiments: a Translation [with LIFE (pp. 19)] by P. FLEURY MOTTELEY, with portrait, 4 fs. title-pages, and numerous woodcuts reduced from those of the Elizabethan first edition, roy. 8vo. armorial cl., uncut, t. e. g. (SCARCE), £1. 5s
New York, 1893

THE FIRST ENGLISH TRANSLATION, owed by us to America. It contains fs. reproductions of the woodcuts in the first edition, and fs. title-pages of the first three editions, and Gilbert's 'De Mundo Nostro Sublunari Philosophia Nova' (1651).

- 1940 — On the MAGNET, MAGNETICK BODIES also, and on the GREAT MAGNET the EARTH; a new Physiology, demonstrated by many Arguments and Experiments [translated from the First Edition, by SILVANUS PHILLIPS THOMPSON, SIR JOSEPH LARMOR, RAPHAEL MELDOLA, LATIMER CLARK, SIR BENJAMIN WARD RICHARDSON, F.R.S., and others, with Index], with all the numerous woodcuts in exact fs. from those of the first Edition: NOTES on the DE MAGNETE of DR. WILLIAM GILBERT [edited by SILVANUS P. THOMPSON, F.R.S.], with engravings—2 vols. sm. folio in 1, finely printed on handmade paper at the Chiswick Press; limp white vellum, with silken ties (SCARCE), £3. 15s
Gilbert Club, 1900-1

'This version has been prepared from the famous and rare original folio Latin edition of 1600, and is, as far as circumstances would permit, a facsimile (in English) of that edition. The translation is a page for page version; all the cuts and the finest of the ornamental initials having been reproduced in fs. A short index has been added to the text . . . The edition is limited to 250 copies.'

The greatest achievement of the *De Magnete* was the establishment of the magnetic nature of the earth, which Gilbert proved analogically by his *terrella*, a large loadstone cut into the shape of a sphere.

In electrical nomenclature he created the terms *electric* and *non-electric* in discovering the fact that many other substances besides amber and jet (then alone supposed to possess it) have an electric action. From the word *electric* Robert Boyle afterwards derived the term electricity as used at the present time.

One of Gilbert's most noteworthy discoveries, among the many contained in his book, is that of the earliest electroscopes ever devised—the needle one.

'His work contains all the fundamental facts of the science, so fully examined indeed, that even at this day we have very little to add to them.'—*Dr. Whewell*.

Prof. Silvanus Thompson's 'Notes' are not only an indispensable commentary, but a valuable contribution to the early history of magnetism and electricity.

With GILBERT, NEWTON, and DARWIN, England may be said to have opened the window on the constitution of the universe.

- 1941 — GUILIELMI GILBERTI, Colcestrensis, Medici Regii, de MUNDO NOSTRO SUBLUNARI PHILOSOPHIA NOVA. Opus posthumum, ab Authoris FRATRE collectum pridem et dispositum, nunc ex duobus MSS. Codicibus editum ex Museo Viri perillustri GUILIELMI BOSWELLI, Equitis aurati, etc.: et Oratoris apud Fœderatos Belgas Angli; with folding plate, and numerous woodcuts and diagrams, 4to. old white vellum (a few ll. crumpled, otherwise A VERY FINE COPY); RARE, £2. 2s
Amstelodami, Ludovico Elzevir, 1651

Attempting a new system of philosophy which was to replace Aristotle's. It contains much interesting physical and meteorological matter.

The article on the author in *D. N. B.* affords an illustration of the danger of a purely literary editorship of a general biographical dictionary, for only slightly more than one column is devoted to the creator of magnetical science, and one of the greatest illustrations of the English people.

GRAVESANDE (Willem Jan van s')—v. HUYGENS, post.

- 1942 **GRAY** (Andrew, F.R.S., Univ. Glasgow) THE THEORY and PRACTICE of ABSOLUTE MEASUREMENTS in ELECTRICITY and MAGNETISM, with 303 illustrations, 2 vols. cr. 8vo. in 3, cl., 18s 6d (p. £1. 17s 6d)
1888-93

The standard work on the subject.

- 1943 — TREATISE ON MAGNETISM and ELECTRICITY, Vol. I (all pub.), illustrated, 8vo. cl., 7s (p. 14s nett)
1898

- 1944 — TREATISE ON PHYSICS, Vol. I (all pub.): DYNAMICS and PROPERTIES OF MATTER, with 350 woodcuts, 8vo. cl., 6s 6d (p. 15s)
1901

'Providing a treatise which may serve for those who wish to have in one book an account of theoretical and experimental physics sufficient for most practical purposes of scientific and technical education.'—*Preface*. It supposes, however, a knowledge of the calculus.

- 1945 **GRAY** (Thomas; Rose Polytechnic Inst.) SMITHSONIAN PHYSICAL TABLES, roy. 8vo. sewn, 6s
Smithsonian Inst., Washington, 1896

V. PHYSICS, continued:—

- 1917 **GREGORY (David, F.R.S., Savilian Prof. Astronomy, Oxon.)** CATOPTRICÆ et DIOPTRICÆ SPHÆRICÆ ELEMENTA, editio princeps; with 3 folding plates, 12mo. sound copy in contemporary sheep (RARE), £1. 5s
Edinburgi, 1713
- 1948 ——— **ANOTHER COPY, contemporary calf (fine copy), £1. 7s 6d**
- 1949 ——— **ELEMENTS of CATOPTICS and DIOPTRICS, with a Method for finding the Foci of all Specula as well as Lens's universally . . . a Solution of Problems, and a particular Account of Microscopes and Telescopes, from Mr. HUYGENS, with Introduction shewing the Discoveries made by Catoptics and Dioptries, by WILLIAM BROWNE, M.D., first edition in English, with 3 folding maps, 8vo. contemporary panelled calf (RARE), 17s 6d**
E. Curll, 1715
- 1950 ——— **SECOND [ENGLISH] EDITION, translated from the Latin Original, with large Supplement by WILLIAM BROWNE, M.D., with Appendix by J. T. DESAGULIERS, pr., F.R.S., on the REFLECTING TELESCOPE, and original Letters between SIR I. NEWTON and DR. JAMES GREGORY relating thereunto, now first published, with plates, 8vo. old calf (RARE), 15s**
1735
‘A concluding remark (p. 98 of the original work), as to the possibility of counteracting colour-aberration in lenses, by combining in them media of different densities, gave the first hint of the achromatic telescope.’—*Miss Agnes M. Clerke.*
The suggestion was realised in 1757 by the invention of the achromatic lens by JOHN DOLLOND, F.R.S.
- 1951 **GROVE (Sir William Robert, Justice of the Queen's Bench Division; F.R.S.)** On the CORRELATION of PHYSICAL FORCES: Lectures in the London Institution, 1843, first edition, 8vo. (pp. 56), sewn (very scarce), 10s 6d
1846
- 1952 ——— **SIXTH [LAST] EDITION, with other CONTRIBUTIONS to SCIENCE, woodcuts, thick 8vo. cl., uncut (o. p.), 7s 6d (p. 15s)**
1874
This edition includes the Bakerian Lecture, 1852, ‘On the Electro-Chemical Polarity of Gases’, ‘On the Striae seen in the Electrical Discharge in Vacuo’, the papers containing his invention of a zinc and platinum galvanic cell, named after him, and of a ‘gas voltaic battery’, as well as numerous other papers contributed to the ‘Philosophical Transactions’, etc.
- 1953 **GRUNERT (Johann August, Univ. Greifswald)** OPTISCHE UNTERSUCHUNGEN; with 3 plates, 3 vols. 8vo. in 1, hf. calf (scarce), 10s 6d
1846-51
INHALT:—I. Allgemeine Theorie der Fernröhre und Mikroskope: II. Theorie der achromatischen Objective für Fernröhre: III. Theorie der zweifachen achromatischen Oculare.
The treatment of the subject is exclusively mathematical.
- 1954 **HADAMARD (Jacques, Collège de France)** LEÇONS sur la PROPAGATION des ONDES et les ÉQUATIONS de l'HYDRODYNAMIQUE; with 25 diagrams, roy. 8vo. sewn (SCARCE), 15s
1903
- *v. HEYWOOD, post.*
- HADLEY (John, V.-P. R.S.),** BIOGRAPHICAL ACCOUNT of—*v. SCIENTIFIC MEMOIRS, No. 394.*
- 1955 **HAGENBACH (August), et Heinrich KONEN:** ATLAS des SPECTRES d'ÉMISSION des ÉLEMENTS d'après des Photographies, avec Texte explicatif, traduit par HENRI VEILLON; with 28 plates, 4to. sewn, 17s 6d (p. F. 33 nett)
1905
‘Un atlas établi sur une base unique, et contenant les spectres de tous les éléments avec le degré de perfection que les procédés modernes permettent d'atteindre dans une échelle de reproduction identique pour tous les spectres, et embrassant tant les parties visibles que les invisibles.’
- 1956 **HAMILTON (Sir William Rowan, Royal Astronomer of Ireland)** THEORY of SYSTEMS of RAYS [PART I: On Ordinary Systems of Reflected Rays], with the THIRD SUPPLEMENT, 2 vols. 4to. in 1, hf. calf (SCARCE), 12s 6d
[Dublin, 1827-34]
- 1957 ——— **THIRD SUPPLEMENT ONLY, 4to. (pp. 144), with author's inscr., and auto. of Lord Justice Stirling, F.R.S., 6s**
1833
Containing the author's discovery of conical refraction. The third supplement contains a theory of conical polarisation. ‘Applying the laws of optics he proved that under certain circumstances a ray of light passing through a crystal will emerge not as a single or double ray but as a cone of rays. This theoretical deduction involved the discovery of two laws of light: and under the mathematical aspects was pronounced by Sir John Herschel to be ‘a powerful and elegant piece of analysis’; while Prof. Airy, on the physical side, said ‘it had made a new science of optics’.—*D. N. B.*
- 1958 **HANDBUCH der PHYSIK, unter Mitwirkung von R. ABEGG, F. AUERBACH, A. BEMPORAD, F. BRAUN, M. CANTOR, S. CZAPSKI, P. DRUDE, K. EXNER, L. GRAETZ, H. KAYSER, M. V. ROHR, u. A. herausgegeben von A. WINKELMANN, 2. [NEUESTE und gänzlich umgearbeitete] AUFLAGE, BAND I. III—VI; with 1557 illustrations, 5 thick vols. roy. 8vo., vv. 4-6 in the original hf. moleskin, and the rest sewn, £7. (p. M. 202)**
Leipzig, 1905-8
INHALT:—I. Allgemeine Physik: III. Wärme: IV—V. Elektrizität und Magnetismus: VI. Optik.
The most extensive treatise on the subject hitherto published, and of well-known excellence.
- 1959 **HARRIS (Sir William Snow, F.R.S.)** On the NATURE of THUNDERSTORMS, and the Means of PROTECTING BUILDINGS and SHIPPING against LIGHTNING, with plates and woodcuts, 8vo. cl., uncut (scarce), 10s
1843
A full account of his invention of a ship's lightning conductor, and an answer to his critics. His system was adopted in the Royal Navy in 1839, and rewarded with an annuity of £300. by the Government, and later with a knighthood and a grant of £5000.—an unusual example of official gratitude.
- 1960 ——— **TREATISE on FRICTIONAL ELECTRICITY, in Theory and Practice, edited, with Memoir, by CHARLES TOMLINSON, F.R.S., with numerous woodcuts, 8vo. cl. (scarce), 8s 6d**
1867
A work of well-known merit, including chapters on Accumulators, and on Electrical Manipulation. The author was awarded the Royal Society's Copley Medal for his researches on the laws of electricity of high tension, and the Bakerian prize for his ‘Inquiries concerning the Elementary Laws of Electricity’.
- *v. SCIENTIFIC MEMOIRS, No. 394.*
- 1961 **HARTMANN (Eduard v.)** Die WELTANSCHAUUNG der MODERNEN PHYSIK, roy. 8vo. sewn, 3s 6d (p. M. 6.50)
Leipzig, 1902
- 1962 **HAUSEN (Christian August; Univ. Leipzig)** NOVI PROPECTUS in HISTORIA ELECTRICITATIS, post Obitum Auctoris ex Msto. ejus editi; præmissa est Commentatiuncula de Vita et Scriptis Auctoris; with fine copperplate, 4to. sewn (rare), 12s 6d
Lipsiae, 1743
Valuable as containing a description (and illustration) of the author's electrical machine—the first one made in Germany—consisting of a glass cylinder. It differed only slightly from Hauksbee's (v. Nos. 1904-5, post), but was of some importance in having finally displaced the glass tubes till then in general use.

V. PHYSICS, continued:—

- 1964 **HAUKSBEE** [the elder] (Francis, F.R.S.) **PHYSICO-MECHANICAL EXPERIMENTS** on various Subjects, containing an Account of the SURPRIZING PHENOMENA touching LIGHT and ELECTRICITY, producible on the ATTRITION of BODIES, with many other Remarkable Appearances, not before observ'd, with the Explanations of all the Machines, and other APPARATUS us'd in the Experiments; 2nd [and last] Edition, with SUPPLEMENT, containing several new Experiments, with 8 fine folding copperplates, and engravings on copper and wood, 8vo. contemporary calf (LARGE AND FINE COPY); RARE, £1. 5s 1719
- 1965 ——— **ANOTHER COPY**, handsomely bound in hf. crushed brown Levant morocco gilt, t. e. g. (plates mounted, and two defective), 17s 6d
 One of the most important early works on electricity, containing a description of the FIRST ELECTRICAL MACHINE WITH A GLASS CYLINDER (invented by the author), which was 'turned by a winch and rubbed by the hand', as well as descriptions and illustrations of an improved air-pump of his invention, founded on his discovery of the 'lateral communication of motion in air.'
 In his preface he mentions that 'the Nature and Laws of Electrical Attractions have not yet been much consider'd by Any.' In the above work and his contributions to the Royal Society he carried further the tentative observations of Dr. Gilbert and Boyle on electricity, and by his experiments may be said to have laid the foundation of that science. He certainly was the first to discover the electric spark. He also determined the relative weight of water and air, and ascertained the refractive index of various fluids.
 The above second edition contains a Supplement (pp. 86) of 24 new experiments, which is not contained in the edition of 1709.
- 1966 **HEATH** (Robert Samuel; v.-p. Univ. Birmingham) **TREATISE ON GEOMETRICAL OPTICS**, with numerous diagrams, 8vo. cl., 4s 6d. (p. 12s 6d) Univ. Press, Cambridge, 1887
- 1967 ——— **ANOTHER COPY**, cl., with references by Lord Justice Stirling, F.R.S., 5s
 The standard work on the subject, of which it includes a bibliography of memoirs and treatises.
- 1968 **HEAVISIDE** (Oliver; F.R.S.) **ELECTRICAL PAPERS**, with diagrams, 2 vols. large 8vo. cl. (fresh copy); VERY SCARCE, £3. 3s 1892
 A collection of the author's voluminous and important papers, originally issued in the *Electrician*, on Electromagnetic Waves and Surface Conduction, Telegraphy, the Theory of the Telephone, etc. etc.
 v. PHYSICAL PAPERS, post.
- 1969 **HELMHOLTZ** (Hermann Ludwig Ferdinand v., Univ. Heidelberg; F.R.S.) **Über die ERHALTUNG der KRAFT**, eine physikalische Abhandlung, vorgetragen in der Sitzung der physikalischen Gesellschaft zu Berlin am 23sten Juli 1847, erste Auflage, 8vo. sewn (VERY SCARCE), 18s Berlin, 1847
 The scarce first edition of the work which embodies the author's investigations on the principle of the conservation of energy, whose origination he shares with J. R. v. Mayer, Joule, Lord Kelvin, and Clausius.
- 1970 ——— **HANDBUCH der PHYSIOLOGISCHEN OPTIK**; with 11 plates, and 213 woodcuts, roy. 8vo. hf. morocco (rubbed); SCARCE, 15s Hamburg, 1867
 FIRST EDITION of the author's most important work, the first systematic treatise applying physical laws to the study of the physiology of the eye, and equally valuable for the original discoveries and the historical investigations it contains.
- 1971 ——— **OPTIQUE PHYSIOLOGIQUE**, traduite par ÉMILE JAVAL et N. TH. KLEIN; with 11 plates, and 208 woodcuts, roy. 8vo. (pp. 1170), hf. olive morocco gilt, cl. sides (SCARCE), £1. 15s 1867
- 1972 ——— **ANOTHER COPY**, in 2 vols. hf. calf (joints cracked), £1. 10s
 No English translation of this great work has ever been published.
- 1973 ——— **Die LEHRE von den TONEMPFINDUNGEN**, als physiologische Grundlage für die THEORIE der MUSIK, 2. Auflage; with 57 woodcuts, 8vo. mottled calf gilt, 4s 6d Braunschweig, 1865
- 1974 ——— **Dritte UMGARBEITETE AUFLAGE**; with 65 woodcuts, 8vo. mottled calf gilt, 6s
 ibidem, 1870
- 1975 ——— **On the SENSATIONS of TONE as a PHYSIOLOGICAL BASIS for the THEORY of MUSIC**, translated from the third German Edition, with additional Notes and Appendix, by ALEXANDER JOHN ELLIS, F.R.S. [philologist], with 65 woodcuts, thick 8vo. cl., 10s 6d (p. £1. 16s) 1875
 The original contributions by the remarkable translator extend to over 160 pages.
- 1976 ——— **SECOND ENGLISH EDITION**, translated, thoroughly revised, and corrected, with numerous Notes, and new Appendix to 1885, by ALEXANDER JOHN ELLIS, F.R.S. [philologist], with woodcuts, etc., roy. 8vo. cl., 17s 6d 1885
 This standard work contains the author's numerous discoveries in physical and physiological acoustics.
- 1977 ——— **POPULAR LECTURES on SCIENTIFIC SUBJECTS**, translated by EDMUND ATKINSON, with Introduction by JOHN TYNDALL, F.R.S.: BOTH SERIES, first editions in English, with woodcuts, 2 vols. large post 8vo. cl., with references by Lord Justice Stirling, F.R.S., 8s 6d (p. £1.) 1873-81
 Including Relation of Natural Science to Science in general, Goethe's Scientific Researches, Physiological Causes of Harmony, Interaction of Natural Forces, Conservation of Force, Origin and Significance of Geometrical Axioms, Relation of Optics to Painting, Origin of the Planetary System, etc. etc.
- 1978 ——— **VORLESUNGEN über die ELEKTROMAGNETISCHE THEORIE des LICHTS**, herausgegeben v. ARTHUR KÖNIG und CARL RUNGE; with 54 woodcuts, roy. 8vo. hf. brown morocco gilt, cl. sides (as good as new), 14s Hamburg, 1897
- 1979 ——— : KOENIGSBERGER (Leo; Prof. Mathematics, Heidelberg) HERMANN VON HELMHOLTZ, translated by FRANCES A. WELBY, with Preface by LORD KELVIN, P.R.S., with 3 fine portraits (2 after LENBACH), large 8vo. cl., uncut, 10s 6d (p. 16s nett) Clarendon Press, Oxford, 1906
 v. PHYSICAL MEMOIRS, post.
- 1980 **HEMMING** (George Wirgman; Senior Wrangler; K.C.) **BILLIARDS MATHEMATICALLY TREATED**, with 2 plates, and diagrams, impl. 8vo. cl., 4s 1899
- 1981 ——— **SECOND [LATEST] EDITION** [enlarged], with 2 plates, large folding chart, and diagrams, impl. 8vo. cl. (o. p.), 6s 6d 1904
 Of singularly little interest to the man about town.
 See CORIOLIS, ante, for another work on this subject.
- 1982 **HOSKINS** (Leander Miller, Leland Stanford Jr. Univ.) **THE ELEMENTS of GRAPHIC STATICS**: revised Edition, with 8 plates and 77 diagrams, 8vo. cl., 6s (p. 10s nett) New York, 1899

V. PHYSICS, continued:—

- 1984 **HERAPATH** (John; founder of '*Herapath's Railway Journal*') MATHEMATICAL PHYSICS; or the Mathematical Principles of Natural Philosophy: with a Development of the Causes of Heat, Gaseous Elasticity, Gravitation, etc., with 4 folding plates, and 3 folding tables, 2 vols. 8vo. calf, with author's inser. to JOHN THADEUS DELANE (editor of '*The Times*'); scarce, 12s 1847
A strikingly original treatise, chiefly based on the author's theory of gravitation, which was refused by the Royal Society, but published in the '*Annals of Philosophy*.' He was invited by Lord Brougham to be corrector and editor of his mathematical papers, but after getting some way ended, as might have been foreseen, in a quarrel with his equally self-opinionated patron.
- v. SCIENTIFIC MEMOIRS, No. 394.
- 1985 **HERMAN** (Robert Alfred, *Fellow of Trinity*) TREATISE ON GEOMETRICAL OPTICS, with 107 diagrams, 8vo. cl., 6s 6d (p. 10s nett) 1900
Univ. Press, Cambridge
Introducing a new method of determining the properties of a symmetrical optical instrument, in which the angle of divergence of a small pencil, rather than any coordinate of its origin, has been adopted as the leading feature.—*Preface*.
- 1986 **HERMANN** (Jakob) PHORONOMIA, sive de VIRIBUS et MOTIBUS CORPORUM SOLIDORUM et FLUIDORUM; with engraved title by Wandelaar, and 12 folding plates, 4to. contemporary calf, Amstelredami, 1716 12s 6d
The author's most important work, treating of the statics of solid and fluid bodies analytically, and more especially of the brachistochrone in a resisting medium. It also contains a description of his thermometer, an improved form of Amontons' air thermometer, which is not affected by changes in the pressure of the air. He was a disciple of Jacques Bernoulli, and preceded Euler as professor of mathematics at Petrograd.
- 1987 **HERTZ** (Heinrich Rudolf, *Univ. Bonn.*) ELECTRIC WAVES: Researches on the Propagation of Electric Action with Finite Velocity through Space: authorised English Translation by D. E. JONES, with Preface by LORD KELVIN, with 40 illustrations, 8vo. cl., 6s (p. 10s nett) 1893
Containing the author's investigations, by elaborating Clerk-Maxwell's theory, on electric waves, now known as 'Hertzian waves', which play such an important part in connexion with wireless telegraphy, and direct the evolution of the whole British Fleet from the antennae of the Admiralty in Whitehall.
- 1988 — MISCELLANEOUS PAPERS, with Introduction by PHILIPP LENARD: authorized Translation by D. E. JONES and G. A. SCHOTT, with portrait, folding plate, and 35 diagrams, 8vo. cl., 6s (p. 10s nett) 1896
- 1989 — THE PRINCIPLES OF MECHANICS, presented in a new Form, with Introduction by H. v. HELMHOLTZ, translated by D. E. JONES and J. T. WALLLEY, 8vo. cl., 6s (p. 10s nett) 1899
Based on Helmholtz's investigations, the above work discusses the various forms of energy, as well as the conditions of change from one form to another.
'A book which must be of the greatest interest to every reader who can appreciate a logical system of dynamics developed with the greatest ingenuity and in the most perfect mathematical form. In the future this book may prove of great heuristic value as a guide to the discovery of new and general characteristics of natural forces.'—*Prof. v. Helmholtz*.
- 1990 **HIGHTON** (Edward, C.E.) The ELECTRIC TELEGRAPH: its History and Progress, with woodcuts and diagrams, fcap. 8vo. cl. (scarce), 6s 1852
Historically interesting for illustrating various early apparatus and accessories. He incidentally mentions the interesting fact that the semaphore telegraph was still in use between Liverpool and Holyhead.
- 1991 —, (and Henry, pr.; friend of Dr. Arnold and enemy of Dean Stanley), SPECIFICATION OF the PATENT granted to, for IMPROVEMENTS in ELECTRIC TELEGRAPHS, sealed Jan. 25, 1848, with 3 folding plates (soiled), 8vo. hf. calf, with author's inser. (scarce), 7s 6d [1848]
The author's scheme of 'Telegraphy without Insulation', which got the silver medal of the Society of Arts.
- 1992 **HÖFLER** (Alois; German Univ., Prague), Eduard MAISS, und Friedrich POSKE: PHYSIK, mit Zusätzen aus der angewandten Mathematik, Logik und Psychologie, mit 230 physikalischen Leitaufgaben; with 12 plates (some coloured or linen-mounted), and 981 other illustrations, 8vo. (pp. 997), handsomely bound in hf. black morocco, cl. sides (as good as new), 10s (p. M. 15 sewn) Braunschweig, 1904
- 1993 **HOOKE** (Robert, *Gresham Prof. Geometry, F.R.S.*): PHILOSOPHICAL EXPERIMENTS and OBSERVATIONS of R. H., and other Eminent Virtuoso's in his Time, publish'd by W. DERHAM, F.R.S., with plates and woodcuts, 8vo. old calf (joints cracked); RARE, 18s 6d 1726
'Waller died before a projected second volume [of the Posthumous Works] appeared, and some of the remaining MSS. furnished Derham's 'Philosophical Experiments'.'—*D. N. B.*
'Hooke was a man of extraordinary inventive genius, and has justly been considered as the greatest of philosophical mechanics. There was no important invention by any philosopher of that time which was not in part anticipated by Hooke. His theory of gravitation subsequently formed part of Newton's; he anticipated the invention of the steam engine, and the discovery of the laws of the constrained motions of planets. Among his own completed discoveries are the law of the extension and compression of elastic bodies, the balance spring of watches and the anchor-escapement for clocks, and the permanency of the temperature of boiling water. The quadrant, telescope, and microscope are also materially indebted to him.'
- POSTHUMOUS WORKS.—v. Nos. 322-4.
- 1994 **HOPKINSON** (John, F.R.S.; *Prof. Electrical Engineering, K. C. L.*) ORIGINAL PAPERS, Technical and Scientific, edited [with Memoir (p. 66)] by BERTRAM HOPKINSON, F.R.S., with 2 fine portraits, and numerous illustrations, 2 vols. 8vo. cl., uncut (o. p.), 12s (p. £1. 1s nett) 1901
Univ. Press, Cambridge
- 1995 — VOL. II ONLY: SCIENTIFIC PAPERS, 8vo. cl., 6s (p. 10s 6d nett)
Including his valuable papers on his experiments on the magnetic properties of iron, for which he was awarded the Royal Society's medal, also his papers on the theory of the dynamo machine, first introducing the notion of the characteristic curve, his improvements in the dynamo, electric lighting for lighthouses, etc. etc.
- v. ELECTRICAL PAPERS, ante, and PHYSICAL PAPERS, post.
- 1996 **HUYGENS** [Latine HUGENIUS] (Christiaan, F.R.S.) EXERCITATIONES MATHEMATICÆ et PHILOSOPHICÆ, ex MSS. in Bibliotheca Academiae Lugduno-Batavæ servatis editit PETRUS JOANNES UYLENBROEK; with 4 folding plates and fs., 2 vols. 4to. boards, uncut (scarce), 10s 6d Hagæ Comitum, 1833
Containing Huygens's scientific correspondence with Leibniz, the Marquis de l'Hospital, de Vaumesle, Fatio de Duillier, etc. etc.
- OPERA VARIA, OPERA RELIQUA, and OPUSCULA POSTHUMA.—v. Nos. 329-35.

V. PHYSICS, *continued* :—

- 1998 **HOVENDEN** (Frederick, F.L.S.) WHAT IS HEAT? a Peep into Nature's most hidden Secrets, with 94 woodcuts, 8vo. cl., 5s (p. 15s) 1894
- 1999 **HUGHES** (Arthur Llewelyn, Rice Inst., Houston, Texas) PHOTO-ELECTRICITY, with 40 illustrations, 8vo. cl., 4s (p. 6s nett) Univ. Press, Cambridge, 1914
- 2000 **HUNT** (Robert, F.R.S.) RESEARCHES ON LIGHT : the Phenomena connected with the Chemical and Molecular Changes produced by the Influence of the Solar Rays, embracing all the known PHOTOGRAPHIC PROCESSES, and NEW DISCOVERIES in the Art, with coloured frontispiece, and woodcuts, 8vo. cl., 6s 1844
 'Another experimenter who tried to obtain the natural colours of objects by means of photography was Robert Hunt. These researches took place between 1840 and 1843, and the results were set forth in his work 'Researches on Light', published in 1844.'—*A. T. Story.*
- 2001 ——— SECOND EDITION [greatly enlarged], with folding frontispiece, and woodcuts, 8vo. cl. (scarce), 12s 6d 1854
 'Mainly a history of photography; but the 2nd edition (1854) contained a large number of original experiments and new analyses of the solar ray.'—*D. N. B.*
- 2002 **IBBETSON** (William John, F.R.A.S.) ELEMENTARY TREATISE on the MATHEMATICAL THEORY of PERFECTLY ELASTIC SOLIDS, with short Account of VISCOUS FLUIDS, with 65 illustrations, 8vo. cl., 10s 6d (p. £1. 1s) 1897
- 2003 **INGALLS** (Col. James Munroe, U.S. Army) INTERIOR BALLISTICS; 3rd [latest] Edition [rewritten], with diagrams, 8vo. cl., 7s 6d (p. 12s 6d nett) New York, 1912
 Why did the Germans think that Americans were ignorant of the art of war?
- 2004 **JACOBI** (Carl Gustav Jakob; Prof. Mathematics, Königsberg; F.R.S.) VORLESUNGEN über DYNAMIK, nebst FÜNF HINTERLASSENEN ABHANDLUNGEN desselben, herausgegeben von A. CLEBSCH, 4to. boards (SCARCE), 18s Berlin, 1866
 Including 'Probleme der Mechanik in welchen eine Kräftefunction existirt, und über die Theorie der Störungen'; 'Über die vollständigen Lösungen einer partiellen Differentialgleichung erster Ordnung'; 'Über die Integration der partiellen Differentialgleichungen erster Ordnung zwischen vier Variablen'; 'De Aequationum Differentialium Isoperimetricarum Transformationibus,' etc. etc.; 'De Aequationum Differentialium Systemate non Normali ad Formam Normalem revocando.'
- 2005 **JACOBI** (Moritz Hermann v.; brother of the above), und Heinrich Friedrich Emil LENZ : Ueber die GESETZE der ELECTROMAGNETE, II.—III. Abtheilung; with 2 folding plates, 4to. (pp. 24), sewn (scarce), 7s 6d St. Petersburg [Petrograd], 1843
 'Lenz and Jacobi suggested that the magnetism of an electromagnet was proportional to the current and to the number of turns of wire in the coil.'—*Prof. Silvanus Thompson, F.R.S.*
- JAHRESBERICHT** über die FORTSCHRITTE der PHYSISCHEN WISSENSCHAFTEN—v. No. 106.
- 2006 **JAMIN** (Jules Célestin, de l'Institut) COURS de PHYSIQUE de l'École Polytechnique; 3^e Édition, augmentée et entièrement refondue par J. C. JAMIN et E. BOUTY; with 14 folding plates (2 coloured), and 1200 woodcuts, 4 vols. 8vo. hf. morocco neat, or, hf. calf gilt, 10s 6d (p. F. 67 nett sewn) 1882-3
- 2007 ——— QUATRIÈME [DERNIÈRE] ÉDITION, augmentée et entièrement refondue par EDMOND BOUTY; with 14 folding plates (2 coloured) and 1587 woodcuts, 4 vols. in 5, cl., uncut, t. e. g., Suppléments I^{er} à III^e, par E. BOUTY; with 2 plates and 193 woodcuts, 3 vols. sewn—8 vols. 8vo. in 9, £2. 5s (p. F. 95 nett sewn) 1885-1906
 The standard French work on physics.
- JANET** (Paul, de l'Institut)—v. BOUSSINESQ, ante.
- 2008 **JAUMANN** (Gustav, Brünn) Die GRUNDLAGEN der BEWEGUNGSLEHRE, von einem modernen Standpunkte aus; with 124 woodcuts, 8vo. sewn, 6s 6d (p. M. 11) Leipzig, 1905
- 2009 ——— ANOTHER COPY, buckram, uncut, t. e. g., 7s 6d
- 2010 **JELLETT** (John Hewitt, D.D., Provost T. C. D., P.R.I.A.) ELEMENTARY TREATISE on the CALCULUS of VARIATIONS, with folding plate, 8vo. cl., uncut (VERY SCARCE), with auto. of Lord Justice Stirling, F.R.S., £1. 10s Dublin, 1850
 'This valuable work constitutes the only complete treatise on the calculus of variations in the English language . . . We strongly recommend the student to master this important volume.'—*Toothunter's History of the Calculus of Variations.*
 'The first really competent presentation of Lagrange's idea is that of Jellett.'—*Prof. E. Mach.*
- 2011 ——— RESEARCHES in CHEMICAL OPTICS (1874)—v. OPTICAL PAPERS, post.
 ——— TREATISE on the THEORY of FRICTION, with 30 illustrations, 8vo. cl. (scarce), 10s ibidem, 1872
 The only extant treatise in English on the theory of friction considered as a part of rational mechanics. 'Some of the principles contained in the present treatise are believed to be here enunciated for the first time.'—*Preface.* These include the theory of spinning tops, afterwards completed by Lord Kelvin.
- 2012 ——— Die THEORIE der REIBUNG, deutsch bearbeitet von J. LÜROTH und A. SCHEPP; with 30 illustrations, 8vo. buckram, 4s (p. M. 6 sewn) Leipzig, 1890
- JENKIN** (Henry Charles Fleeming, F.R.S., Prof. Engineering, Univ. Coll., London; master of Robert Louis Stevenson) PAPERS LITERARY, SCIENTIFIC, etc.—v. No. 338.
- 2013 ——— : REPORTS of the COMMITTEE on ELECTRICAL STANDARDS, appointed by the BRITISH ASSOCIATION, revised by WILLIAM THOMSON [LORD KELVIN], J. CLERK MAXWELL, and FLEEMING JENKIN, F.R.S., with the latter's REPORT on UNITS of ELECTRICAL RESISTANCE, and his CANTOR LECTURES [on SUBMARINE TELEGRAPHY], 7 folding plates, and diagrams, 8vo. cl. (scarce), 12s 1873
 'The experimental work of first making practical standards, founded on the absolute system, which led to the unit now known as the British Association ohm, was chiefly performed by Clerk Maxwell and Jenkin. The realisation of the great practical benefit which has resulted from the experimental and scientific work of the Committee is certainly due to Jenkin's zeal and perseverance as secretary, and as editor of the Collected Reports . . . The volume of Reports included Jenkin's Cantor Lecture 'On Submarine Telegraphy', through which the practical applications of the scientific principles . . . became part of general knowledge in the engineering profession.'—*Lord Kelvin.*

V. PHYSICS, continued:—

- 2016 **JEANS (James Hopwood, F.R.S., Fellow of Trinity)** *The DYNAMICAL THEORY OF GASES, with 25 diagrams, impl. 8vo. cl., 8s (p. 15s nett)* *Univ. Press, Cambridge, 1904*
 'My first aim has been to develop the theory of gases upon as exact a mathematical basis as possible.'—*Preface*. There are chapters on Planetary Atmospheres; Molecular Aggregation and Dissociation: and the Evidence of the Kinetic Theory as to the Size of Molecules.
- 2017 — *The MATHEMATICAL THEORY OF ELECTRICITY AND MAGNETISM, with 137 illustrations, impl. 8vo. cl., 8s (p. 15s nett)* *apud eandem, ibidem, 1908*
- 2018 **JOHNSON (George Lindsay, M.D., F.R.C.S.)** *PHOTOGRAPHIC OPTICS and COLOUR PHOTOGRAPHY, including the Camera, Kinematograph, Optical Lantern, and the Theory and Practice of Image Formation, with 14 plates (5 COLOURED), and 170 woodcuts, 8vo. cl., 3s 6d (p. 7s 6d) 1909*
 The author is the inventor of the macula sensitometer and various other optical instruments of precision, and carried out a remarkable series of risky optical experiments on the Fundus Oculi of lions and tigers at the Zoological Gardens.
- 2019 **JOHNSON (William Woolsey, U.S.N. Academy, Annapolis, Md.)** *THEORETICAL MECHANICS; an Elementary Treatise, with 115 diagrams, cr. 8vo. buckram, 7s 6d (p. 12s 6d nett)* *New York, 1910*
- JOUBERT (J.)** *ELEMENTARY TREATISE ON ELECTRICITY AND MAGNETISM—v. FOSTER (G. C.), ante.*
- 2020 **JOULE (James Prescott, F.R.S.)** *SCIENTIFIC PAPERS, published by the Physical Society of London, with fine portrait by Jeans, plates, and woodcuts, 2 vols. 8vo. cl., £1. 2s 6d (p. £1. 12s nett)* *Physical Soc., 1884-7*
 Including the author's important papers on thermo-electricity, and his propounding the law of the conservation of energy through his determination of the mechanical equivalent of heat. But invaluable to scientists as is the principle of the conservation of energy, what matters in the end to dwellers in the Universe is the unescapable fact of its dissipation.
- 2021 — *On the CHANGES OF TEMPERATURE produced by the RAREFACTION and CONDENSATION of AIR, with 6 woodcuts, 8vo. (pp. 15), sewn, 5s* 1845
 'Describing a determination made by observing the heat produced by compressing air and the energy requisite for the compression; the result was 798 foot lbs. In this paper he obtained the important result necessary to justify his procedure that 'no change of temperature occurs when air is allowed to expand in such a way as not to develop mechanical power'.'—*Sir R. T. Glazebrook, F.R.S.*
- 2022 — *On the MECHANICAL EQUIVALENT of HEAT, with plate, 4to. (pp. 22), sewn (VERY SCARCE), 15s* [1850]
 One of the author's most important papers, giving the results of his experiments on the production of heat by friction, which made him one of the originators of the principle of the conservation of energy. 'The introduction to the paper contains a very fair account of the labours of others in the same field. A long series of observations, conducted with the utmost care, leads to the result that the quantity of heat capable of increasing the temperature of a pound of water (weighed in vacuo, and taken at between 55° and 60° F) by 1° F requires for its evolution the expenditure of a mechanical force represented by a fall of 772 lbs. through the space of one foot.' For nearly 30 years this result of Joule's stood alone as the one satisfactory determination of a physical constant.'—*Sir R. T. Glazebrook, F.R.S.*
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- *PAPERS on THERMODYNAMICS—v. THERMODYNAMICS. post.*
- JOURNAL de l'ÉCOLE POLYTECHNIQUE—v. No. 110.**
- 2024 **JUDE (B. H., Rutherford Coll.)** *PHYSICS, Experimental and Theoretical, VOL. I. (all pub.): MECHANICS, HYDROSTATICS, PNEUMATICS, HEAT, and ACOUSTICS, partly from the French (third Edition) of HENRI GOSSIN, with numerous Examples and Exercises, with ANSWERS, 388 illustrations, roy. 8vo. cl., 7s (p. 12s 6d nett)* 1899
- 2025 **JULLIEN (Michel Marie, S.J.)** *PROBLÈMES de MÉCANIQUE RATIONNELLE, disposés pour servir d'Application aux Principes enseignés dans les Cours; 2^e [dernière] Édition [augmentée]; with numerous woodcuts, 2 vols. 8vo. sewn (scarce), 14s* 1866-7
- 2026 — *ANOTHER COPY, 2 vols. hf. calf gilt, 18s*
- 2027 — *ANOTHER COPY, 2 vols. red buckram, 16s*
- 2028 **KAYSER (Heinrich; Prof. Physics, Univ. Bonn)** *LEHRBUCH der PHYSIK, 3. vermehrte Auflage; with 336 illustrations, large 8vo. buckram, t. e. g., 5s (p. M. 11 sewn)* *Stuttgart, 1900*
- 2029 **KIELHAUSER (Ernst A.)** *Die STIMMGABEL, ihre Schwingungsgesetze und Anwendungen auf die Physik: eine auf fremden Untersuchungen fussende Monographie; with 94 illustrations, 8vo. cl., 4s (p. M. 6)* *Leipzig, 1907*
- 2030 **KIRCHHOFF (Gustav Robert; Prof. Physics, Berlin; F.R.S.)** *UNTERSUCHUNGEN über das SONNENSPECTRUM und die SPECTREN der CHEMISCHEN ELEMENTE (I. Teil 3. und vermehrter Abdruck mit Vorwort); with 5 plates (4 folding), 2 vols. 4to. boards, with auto. of Prof. N. Story-Maskelyne, F.R.S. (SCARCE), 15s* *Berlin, 1866-3*
 A classic of the exact sciences, which first contains the complete statement of the principle on which spectrum-analysis is based.
- 2031 — *RESEARCHES on the SOLAR SPECTRUM, and the SPECTRA of the CHEMICAL ELEMENTS, translated with the Author's Sanction from the Transactions of the Berlin Academy by [SIR] HENRY E. ROSCOE [F.R.S.], with 5 lithographic plates (2 coloured), 2 vols. 4to. boards (SCARCE), £1. 5s* *Cambridge, 1862-3*
 'While spectrum-analysis, as a terrestrial science, was due equally to Kirchhoff and Bunsen, its celestial applications belong to Kirchhoff alone. Kirchhoff's explanation of the Fraunhofer lines was epoch-making.'—*Prof. F. Cajori*.
 The second part is especially scarce.
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V. PHYSICS, continued:—

- 2034 **KELVIN** (Sir William Thomson, Lord; P.R.S., *Prof. Natural Philosophy, Glasgow*) An ACCOUNT of CARNOT'S THEORY of the MOTIVE POWER of HEAT, with NUMERICAL RESULTS deduced from Regnault's Experiments on Steam, 4to. (pp. 34), *sewn (very scarce)*, 10s 6d
[Edin., 1849]
This appears to be one of the earliest, if not the earliest, contributions by Lord Kelvin to the Edinburgh Philosophical Society. It contains an elaboration of a previous paper to the Cambridge Philosophical Society, in which he first suggested the absolute zero of temperature (-273°C.), and 'tabulated the values of 'Carnot's function' from 1°C. to 231°C. ' (D. N. B.). The memoir is further important for having rescued from oblivion Carnot's *Réflexions sur la Puissance motrice du Feu* (q. v. ante).
- 2035 ——— **BALTIMORE LECTURES on MOLECULAR DYNAMICS and the WAVE THEORY of LIGHT**, founded on A. S. HATHAWAY'S stenographic Report of twenty Lectures in Johns Hopkins University, Baltimore, Oct., 1884 [v. No. 2038], with twelve Appendixes on allied Subjects; with INDEX, numerous diagrams, thick 8vo. buckram, t. e. g., 10s 6d (p. 15s nett)
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[Edin., 1851]
The second of the author's contributions to the Edinburgh Philosophical Society, in which he formulated the two great laws of thermodynamics. The above contains the axioms 'It is impossible, by means of inanimate material agency, to derive mechanical effect from any portion of matter by cooling it below the temperature of the coldest of the surrounding objects,' and 'It is impossible for a self-acting machine, unaided by any external agency, to convey heat from one body to another at a higher temperature.'
- 2037 ——— ELEMENTS of a MATHEMATICAL THEORY of ELASTICITY, PART I: on STRESSES and STRAINS, 4to. (pp. 18), *sewn, with inscription 'From the Author' (to Prof. A. S. Herschel, F.R.S.)*, 7s 6d
1856
A full analysis of this memoir is contained in Todhunter and Pearson's *History of the Theory of Elasticity*, Vol. II, Part II, pp. 447-52.
- MATHEMATICAL and PHYSICAL PAPERS, and POPULAR LECTURES—v. Nos. 341-3.
- 2038 ——— NOTES of LECTURES on MOLECULAR DYNAMICS and the WAVE THEORY of LIGHT, delivered at the Johns Hopkins University, stenographically reported by A. S. HATHAWAY, *hctographed on 336 pp., with illustrations*, 4to. *sewn (VERY SCARCE)*, £1. 5s
Baltimore, 1884
The original form of these celebrated lectures, hctographed in only a few copies. The edition of 1904 [q. v. supra] contains many revisions and additions.
'Ranging from the most recondite problems of optics to speculations on crystal rigidity, the tactics of molecules and the size of atoms, they almost embody a new conception of the ultimate dynamics of physical nature.'—*Prof. Silvanus P. Thompson, F.R.S.*
- 2039 ——— REPRINT of PAPERS on ELECTROSTATICS and MAGNETISM, with 3 plates (2 folding), and numerous woodcuts, thick 8vo. cl., 10s
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Sir Isaac Newton's own corrected copy:

- 2172 — SECOND [FIRST OCTAVO] EDITION, with Additions, with 12 folding plates, 8vo. old calf, joints neatly mended (FINE COPY); with MS. additions and corrections in Sir Isaac Newton's handwriting, £18. 18s A. Boyer for W. Innys, 1717

The original issue of the second edition, and printed on strong paper. It is rare thus, most copies being of the second issue of 1718. The mathematical tracts were left out in this and the following editions.

The above copy is of great interest for having belonged to Sir Isaac Newton himself, who has made additions and corrections (all verified to be in his handwriting), which were wholly or partly adopted in the later editions of the 'Opticks'. They are: on page 70, line 20:

$\frac{MCq}{NGq}$ is altered into $\frac{AD}{EFq}$ this correction was made in the 3rd Edition). Page 230, line 19: $\frac{161}{10000}$ is altered in text and written out on margin $\frac{1000000}{1000000}$ (corrected in the 3rd Edition). Page 271, line 14: after 'plainest' is added on margin:

'upon the Chart, & removing the chart' (alteration not adopted). Page 275, line 15: after 'second' is added on margin: 'without quicksilver in the same angle' (addition not adopted). Page 334, line 11-12: The passage: 'that side of the same Ray which looks towards' is struck out (correction not adopted). Page 342, line 6: after 'Earth' is added on margin 'or 73'; line 8: 14 is altered in text into 15, and on margin into 16; line 10: '21, 28 or 35' is altered in text into '22, 304, 383', and on margin into '28, 304, 383'; lines 12 and 13: '70, 140, 210', is altered in text into '761, 1534, 230', and on margin into '80, 160, 238' (corrections adopted slightly modified in the 4th Edition). Page 366, line 22: 'height' is struck out, and 'distance' substituted for it on margin (correction made in the 4th Edition). Page 382, line 4: after 'Benefactor' is added: 'as their ancestors did before they corrupted themselves. For the seven Precepts of the Noachides were originally the moral Law of all nations; & the first of them was to have but one supreme Lord God & not to alienate his worship; the second was not to profane his name; & the rest were to abstain from blood or homicide & from fornication (that is from incest adultery & all unlawfull lusts), & from theft & all injuries, & to be merciful even to brute beasts, & to set up magistrates for putting these laws in execution. Whence came the moral Philosophy of the ancient Greeks' (partly adopted in the third Edition, by adding after 'Benefactor': 'as their Ancestors did under the Government of Noah and his Sons before they corrupted themselves').

- 2173 — SECOND ISSUE OF THE SECOND EDITION, with 12 folding plates, 8vo. old calf, hf. calf, or, old calf, rebaked, 12s 6d W. and J. Innys, 1718

In this edition the number of queries at the end of the work is increased from 16 to 31, including the celebrated one (No. 28): 'Are not all hypotheses erroneous in which Light is supposed to consist in pressure or motion propagated through a fluid medium? . . . If it consisted in pressure or in motion propagated either in an instant or in time, it would bend into the shadow. For pressure and motion cannot be propagated in a fluid in right lines beyond an obstacle which stops part of the motion, but will bend and spread every way in the quiescent medium which lies beyond the shadow.' Query 17 discusses the double refraction of Iceland spar. It also contains a new and interesting preface.

'At the end of the 3rd book I have added some Questions. And to shew that I do not take Gravity for an essential Property of Bodies, I have added one Question concerning its Cause, chusing to propose it by way of a Question, because I am not yet satisfied about it for want of Experiments.'—*Advertisement II*.

- 2174 — THIRD EDITION, corrected, with 12 folding plates, 8vo. old calf, or, old calf, neatly rebaked, 12s apud eosdem, 1721

This is a literal reprint of the foregoing edition, save for a few corrections and the addition of one passage in the last sentence in the work referring to Noah and his sons, as pointed out in the note to Newton's annotated copy of the second edition (No. 2172, *supra*).

- 2175 — FOURTH [FINAL] EDITION, corrected, with 12 folding plates, 8vo. old calf, or, old calf, newly rebaked (RARE), 17s 6d William Innys, 1730

This was the last edition revised by the Author. 'It was corrected by the Author's own hand, and left before his Death with the Bookseller.'—*Advertisement to this Fourth Edition*.

- 2176 — OPTICE: sive de Reflexionibus, Refractionibus, Inflexionibus et Coloribus Lucis Libri III, Latine reddidit SAMUEL CLARKE, A.M.; accedunt Tractatus II ejusdem Authoris de SPECIEBUS et MAGNITUDE FIGURARUM CURVILINEARUM; with 19 folding plates, 4to. contemporary calf, newly rebaked (sound and clean copy); RARE, £1. 1s Londini, S. Smith & B. Walford, 1706

THE FIRST LATIN EDITION, translated by Newton's disciple DR. SAMUEL CLARKE, afterwards Rector of St. James's, Westminster, whose alleged Arianism gave rise to so long a controversy. It was the first edition to contain Newton's views on the double refraction of Iceland spar, and included six more queries than the English Edition of 1704. It contains for the first time the celebrated one [No. 28] on the nature of light (v. note to No. 2173, *supra*). The translator received £500. from Newton for his work.

- 2177 — LECTIONES OPTICÆ, Annis MDCLXIX ad MDCLXXI, in Scholis Publicis habitæ: et nunc primum ex MSS. in Lucem editæ, editio princeps; with 24 folding plates, 4to. old vellum (fine copy); RARE, £1. 5s ibidem, Guil. Innys, 1729

Consisting of two parts, 'de radiorum lucis refractionibus', and 'de colorum origine'. Only the first part was ever translated into English.

'Before the end of 1669 he had worked out the details of his discovery of the decomposition of a ray of white light into rays of different colours by means of a prism. The complete explanation of the theory of the rainbow followed from this discovery. These discoveries formed the subject matter of the lectures which he delivered as Lucasian professor from 1669 to 1671 . . . The MS. of his original lectures was printed in 1729 under the title *Lectiones Opticæ*.'—W. W. R. Ball.

'This valuable work contains many beautiful propositions, and interesting and instructive experiments, which are not to be met with in any modern treatise on optics.'—Sir David Brewster, F.R.S.

V. PHYSICS, continued:—

TRANSLATED BY MARAT:

- 2178 **NEWTON** (Sir Isaac, P.R.S.) *OPTIQUE de NEWTON, Traduction Nouvelle, faite par M * * ** [JEAN PAUL MARAT; 'L'Ami du Peuple'] sur la dernière Édition originale. Dedicée au Roi [avec Préface], par M. BEAUZÉE, Editeur de cet Ouvrage, l'un des Quarante de l'Académie Française, etc. etc.; with 21 folding plates, 2 vols. 8vo. old hf. calf (binding rubbed, but a sound and clean copy); RARE, £1. 1s 1787

- 2179 — **ANOTHER COPY**, 2 vols. HANDSOMELY BOUND IN CONTEMPORARY FRENCH CRIMSON MOROCCO EXTRA, hand-tooled backs, silken linings and flyleaves, g. e., by DERÔME (A VERY FINE COPY), £3. 15s

This, like all the other works of this monster of the Terror—long passed however now by the German Emperor—is very rare. The 'Opticks' were previously translated into French by Pierre Coste in 1722, and reprinted in 1725. This translation appears however to have been very unsatisfactory, for the editor characterizes it as 'défectueuse, in fidèle et obscure, servile et barbare'. Marat's translation is by no means a literal one, and should be of special interest, as it was he who first, in France, dared to attack Newton's corpuscular theory.

Marat's translation was apparently unknown to Sir David Brewster, as he only mentions that of P. Coste.

- 2180 — **PHILOSOPHIÆ NATURALIS PRINCIPIA MATHEMATICA; EDITIO II.**, auctior; with folding plate, and diagrams, 4to. old calf (binding slightly damaged); RARE, £1. 10s Cantabrigiæ, 1713

RÉAUMUR'S COPY:

- 2181 — **ANOTHER COPY**, contemporary mottled calf gilt (FINE COPY); RARE, with auto. of [R. A. F.] de Réaumur on title, £2. 2s

This edition contains considerable additions by the AUTHOR, while the chapters on the lunar theory and the theory of comets were much enlarged. It was edited by ROGER COTES, F.R.S., whose preface (pp. 16), in which he vigorously attacks the Cartesian philosophy then still in vogue at the universities, and refutes an assertion that Newton's theory of attraction is a *causa occulta*, is of great historical importance. It also contains a new preface by the author, the Latin verses on him by EDMUND HALEY, the Astronomer Royal, and an 'Index Capitum' and 'Index Rerum Alphabeticus' at end, both by the Editor. Seven hundred and fifty copies were printed of this edition, which has now become RARE.

- 2182 — **EDITIO TERTIA [ET ULTIMA]**, aucta et emendata; with numerous diagrams, 4to. sound copy in contemporary panelled calf (portrait wanting) with bookplate of Earle Bulwer [Sir Henry Bulwer, Lord Dalling, Ambassador at Washington, and concluder of the Clayton-Bulwer Treaty], £1. 1s Londini, Guil. & Joh. Innys, 1726

- 2183 — **ANOTHER COPY**, with numerous diagrams, and the portrait by Vertue, sound copy in contemporary calf (joints weak), with auto. of Lord Justice Stirling, F.R.S., £1. 1s

This edition, the last published during the author's life-time, and the one on which all subsequent ones are based, was edited by HENRY PEMBERTON, M.D., F.R.S., and contains a new preface by Newton, and a large number of alterations, the most important being the scholium on fluxions, and the addition of a new one on the motion of the moon's nodes, to which I may add an account of some additional experiments on the resistance of the air to bodies falling through it, and the use of some fresh astronomical observations in book III.—W. W. R. Ball. It also contains Halley's verses and Cotes's preface.

'Newton modified in the third edition of the *Principia* the scholium relating to fluxions, in which Leibnitz had been mentioned by name. Leibnitz and his friends had always held this scholium to be an acknowledgment of his claim to originality.'—Sir R. T. Glazebrook, F.R.S.

- 2184 — **EDITIO NOVA**, perpetuis Commentariis illustrata, communi Studio PP. THOMÆ LE SEUR et FRANCISCI JACQUIER, ex Gallicana Minimorum Familia, Editio nova, summa Cura recensita; with numerous diagrams, 2 vols. impl. 8vo. hf. cl., 12s Glasguae, 1833

The last and best of the 'Jesuits' Editions', as called in the Glasgow preface, though the editors were Franciscans, edited by JOHN M. F. WRIGHT, and containing all the prefaces to the first three editions, as well as the memoirs on the tides. 'Edition belle et soignée.'—Brunet.

- 2185 — **THE MATHEMATICAL PRINCIPLES OF NATURAL PHILOSOPHY**, translated by ANDREW MOTTE, with NEWTON'S SYSTEM OF THE WORLD; a short Comment on, and Defence of, the Principia, by W. EMERSON; and the Laws of the Moon's Motion according to Gravity, by JOHN MACHIN, F.R.S.; new Edition, with LIFE, carefully revised and corrected by WILLIAM DAVIS, with fine bust portrait by Scriven, and 54 folding plates, besides diagrams, 3 vols. 8vo. in 1, hf. cl. (RARE), £1. 5s 1803

This edition contains for the first time the translation of the *De Mundi Systemate*, which was not contained in the edition of 1729.

'The inconvenience arising from the great scarcity of former editions of the Principia, and System of the World, added to the exorbitant prices charged for them when to be met with, determined the Editor to undertake a New Edition of those Works.'—Preface.

- 2186 — **REPRINT of the above EDITION**, with fine bust portrait by Scriven, and 54 folding plates. 3 vols. 8vo. old hf. calf (a few joints cracked), 18s 6d 1819

- 2187 — **PRINCIPIA, SECTIONS I. II. III.**, with Notes and Illustrations, also Problems, principally intended as Examples of Newton's Methods, by PERCIVAL FROST; pr., F.R.S., with diagrams, post 8vo. cl., with auto. and notes of Lord Justice Stirling, F.R.S., 3s Cambridge, 1854

- 2188 — **THIRTEEN LETTERS** from, as Representative in Parliament of the University of Cambridge, to JOHN COVEL, D.D., Vice-Chancellor, Master of Christ's College [with Introduction and Notes by DAWSON TURNER], with fs. letter, roy. 8vo. hf. red roan (scarce), 6s Norwich, 1848

Dedicated to Dr. Whewell, and published by Dawson Turner from the great collection of the Macro Manuscripts. The letters were written during 'Newton's short Parliamentary career, to persuade the members of the University, who had so lately sworn allegiance to King James, to silence all scruples of conscience while they vowed the same fidelity to his hostile successor'.

- 2189 — **CATALOGUE of the PORTSMOUTH COLLECTION of BOOKS and PAPERS**, written by, or belonging to, SIR ISAAC NEWTON, presented by the EARL OF PORTSMOUTH to the UNIVERSITY of CAMBRIDGE, with diagrams, 8vo. cl. (o. p.), 5s Univ. Press, Cambridge, 1888

This is the great mass of Newton's papers which came at his death into the hands of Mr. Conduitt, who married Catherine Barton, Newton's niece, and eventually into those of Lord Portsmouth at Hurstbourne. They were inspected and ignored by Bp. Horsley, and but little used by Sir David Brewster.

The above valuable volume has preface and appendix to preface by HENRY RICHARDS LUARD, pr., SIR GEORGE GABRIEL STOKES, JOHN COUCH ADAMS, and GEORGE DOWNING LIVING, President of St. John's College, Cantab., F.R.S.

The Portsmouth Papers are of great importance in connexion with the Newton-Leibnitz controversy.

NEWTONIANA—v. Nos. 2160 et seqq., ante.

V. PHYSICS, continued:—

- 2192 **NICHOLS** (Edward Leamington, *Cornell Univ.*), and William Suddards **FRANKLIN**: The **ELEMENTS** of PHYSICS: Mechanics and Heat; Electricity and Magnetism; Light and Sound, with portrait of Faraday and numerous illustrations, 3 vols. 8vo. cl., 12s 6d (p. £1. 2s 6d nett)
— v. **FRANKLIN**, ante.
- NIVEN** (Sir William Davidson, F.R.S.)—v. **MAXWELL** (James Clerk), ante, and **PHYSICAL PAPERS**, post.
- 2193 **NOLLET** (Abbé Jean Antoine; de l'Académie des Sciences; F.R.S.) **ESSAI** sur l'ÉLECTRICITÉ des CORPS, première édition; with fine frontispiece, and 4 folding plates, 1746: **Winkler** [sic Winckler] (Johann [sic F.] Heinrich, Univ. Leipzig) **ESSAI** sur la NATURE, les EFFETS, et les CAUSES de l'ÉLECTRICITÉ; avec une Description de DEUX NOUVELLES MACHINES à ÉLECTRICITÉ; traduit de l'Allemand; with 2 folding copperplates, '48—2 vols. 12mo. in 1, old calf gilt (RARE), £1. 1s 1746-8
The first is one of the author's most valuable works, including a description of his electrical machine. He made numerous interesting experiments with the Leyden jar, which name he introduced in honour of the supposed inventor, CUNÆUS of Leyden, in ignorance of the actual inventor, E. G. v. KLEISER of Cammin. To show its powerful action, he electrified before the King 180 Carthusian monks who formed a line 900 feet long, and must have wished themselves safe back in their (not electric) cells.
He propounded a twofold-motion fluid hypothesis of electricity, by which he attempted to explain electric attraction and repulsion; investigated the influence of electricity on the germination of seeds; and constructed a primitive electro-scope consisting of two linen threads, which, being projected on an arc of 180°, were to show the amount of the electric charge by the rate of their angular divergence.
Winkler's electrical machine was the first in which a fixed woollen pad caused the friction hitherto done by hand.
- 2194 — **LEÇONS de PHYSIQUE EXPÉRIMENTALE**, 6^e Édition; with frontispiece and over 100 folding copperplates, 8 vols. 12mo. old hf. calf, 12s 6d 1764
- 2195 — **NOUVELLE ÉDITION**; with portrait by H. Godin after La Tour, and 100 folding copperplates, 6 vols. 12mo. contemporary hf. calf, 12s 6d 1784
The portrait is re-engraved in this edition.
'Les éditions de 1759, et celles qui sont postérieures, sont les plus estimées.'—*Quérard*. 'On y admire une méthode inconnue jusqu'alors, une netteté singulière dans les idées, et dans la manière de les exprimer. Nollet eut l'art d'assujettir tout à l'expérience, de soumettre les vérités intellectuelles au jugement des sens.'—*Grandjean de Fouchy*.
The author was the discoverer of endosmosis, and in France is considered the father of experimental physics. Besides giving his invention of an improved percussion apparatus, the above work is still of value for containing perhaps the most complete illustrative account of physical apparatus in use during the middle of the Eighteenth Century.
- 2196 — **RECHERCHES** sur les CAUSES PARTICULIÈRES des PHÉNOMÈNES ÉLECTRIQUES, et sur les Effets Nuisibles ou Avantageux qu'on peut en attendre; with 8 folding copperplates, 12mo. old calf gilt, 9s 1749
- 2197 — **NOUVELLE ÉDITION**; with 8 folding copperplates, 12mo. sound copy in contemporary mottled calf gilt, 8s 6d 1764
'Il fut le premier à reconnaître que les corps aiguës déagèrent des courants lumineux, mais ne manifestent pas à autres égards cette puissance électrique . . . que le verre et d'autres corps non-conducteurs étaient plus fortement influencés dans l'air que dans le vide, etc. etc. etc.'—*Biogr. Gén.*
- 2198 **OETTINGER** (Arthur v.; Prof. Physics, Dorpat [Jurjew]) Die SCHULE der PHYSIK, besonders für das Selbststudium; with coloured spectrum-plate, and 454 illustrations, 8vo. hf. black morocco gilt, cl. sides, t. e. g. (nice copy), 8s (p. M. 10 in cl.) Braunschweig, 1910
The counterpart of Professor Ostwald's 'Schule der Chemie.'
- 2199 **OPTICAL PAPERS**, COLLECTION of, as under, chiefly from the PHILOSOPHICAL TRANSACTIONS, with plates and woodcuts, 13 parts in one vol. 4to. cl., with MS. List of Contents by Lord Justice Stirling, F.R.S., £1. 12s 6d 1831-74
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- 2200 — **ANOTHER COLLECTION**, from the PHILOSOPHICAL TRANSACTIONS, as under, with diagrams, 9 parts in one vol. 4to. cl., with MS. List of Contents by Lord Justice Stirling, F.R.S., £1. 1s 1857-99
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- 2201 — **ANOTHER COLLECTION**, as under, with diagrams, 4 parts in one vol. 4to. cl., with MS. List of Contents by Lord Justice Stirling, F.R.S., 14s 1844-82
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- 2202 **PEARSON** (Karl; F.R.S.; Galton Prof. Eugenics, Univ. London) The ELASTICAL RESEARCHES of **BARRE DE SAINT-VENANT**, with 3 plates, besides diagrams, 8vo. hf. parchment, uncut (scarce), 10s 6d Univ. Press, Cambridge, 1889
— v. **TODHUNTER**, post.
- 2203 **PENDLEBURY** (Charles, F.R.S.; St. Paul's School) LENSES and SYSTEMS of LENSES, treated after the Manner of **GAUSS**, with 24 diagrams, 8vo. cl., 3s (p. 5s) Cambridge, 1884
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V. PHYSICS, continued:—

- 2205 **PEREIRA** (Jonathan, M.D., F.R.S.) LECTURES ON POLARIZED LIGHT: with Lecture on the MICROSCOPE; 2nd [last] Edition, greatly enlarged from Materials left by the Author, edited by BADEN POWELL, pr., F.R.S., with 103 woodcuts and diagrams, fcap. 8vo. cl. (scarce), 7s 6d 1854
Specially valuable for the notes by the editor, a contributor to 'Essays and Reviews', and discoverer of that curious phenomenon of interference known as 'Powell's Bands'.

- 2206 **PPAFF** (Christian Heinrich, *Univ. Kiel*) REVISION der LEHRE vom GALVANO-VOLTAISMUS, mit besonderer Rücksicht auf Faraday's, de la Rive's, Becquerel's, Karsten's u. a. neueste Arbeiten; with folding plate, 8vo. boards (nice copy), 8s 6d Altona, 1837

The author was one of the earliest and foremost supporters of the contact theory of voltaic electricity, and much of the work is directed against the chemical theory advanced (by Wollaston, Fabbroni, and Ritter) to account for electric action. He also revised Volta's contact series, and was one of the few who appreciated the importance of Ohm's discovery.

PHILOSOPHICAL MAGAZINE—v. No. 167.

- 2207 **PHYSICAL MEMOIRS**, selected and translated from FOREIGN SOURCES, under the Direction of the PHYSICAL SOCIETY of LONDON, Vol. I, with 5 folding plates, and numerous text-illustrations, roy. 8vo. cl., 12s 6d 1891

Including the following three papers by HERMANN V. HELMHOLTZ: Studies on Electric Boundary Lines: On the Thermodynamics of Chemical Processes; Further Researches respecting the Electrolysis of Water; also: On the Conduction of Electricity in Gases, by W. HITTORF; Radiant Electrode Matter and the so-called Fourth State, by J. PULUY; The Continuity of the Liquid and Gaseous State of Matter, by J. D. v. d. WAALS.

- 2208 — **PAPERS**, A COLLECTION of, as under, from the PHILOSOPHICAL TRANSACTIONS, with plates and text-illustrations, 47 parts in 4 vols. 4to. cl., with notes and MS. Lists of Contents by Lord Justice Stirling, F.R.S., £3. 3s 1870-1902

LIST OF AUTHORS:—BASSET (A. B., F.R.S.) [2 memoirs]; BRYAN (G. H.) [1]; BURBURY (T. H.) [2]; DARWIN (Sir G. H., F.R.S.) [4]; DAVIDSON (Charles) [1]; DYSON (Sir F. W., F.R.S.) [2]; FERRERS (N. M., D.D., F.R.S.) [1]; FITZGERALD (G. F., F.R.S.) [1]; *Electro-Magnetic Theory of Light*: HEAVISIDE (Oliver, F.R.S.) [1]; HICKS (W. M., F.R.S.) [6]; HILL (M. J. M., F.R.S.) [1]; HOUGH (W. S. S.) [3]; LAMB (Horace, F.R.S.) [2]; LOVE (A. E. H.) [1]; MCAULAY (Alexander) [1]; MITCHELL (J. H.) [1]; NIVEN (Charles) [2]; NIVEN (Sir W. D., F.R.S.) [2]; POINCARÉ (J. H.) [1]; *Stabilité de l'Équilibre des Figures pyramides*: POYNTING (J. H.) [2]; RAYLEIGH (Lord, F.R.S.) [1]; *Circulation of Air in Kundt's Tubes*: REYNOLDS (Osborne, F.R.S.) [1]; ROUTH (E. J., F.R.S.) [1]; SAMPSON (R. A., F.R.S.) [1]; SCHUSTER (Arthur, F.R.S.) [1]; SEARLE (G. F. C.) [1]; TARLETON (F. A.) [1]; THOMSON (Sir J. J.) [1]; *Vibrations of a Vortex Ring*: WALKER (G. T.) [2].

- 2209 — **ANOTHER COLLECTION**, as under, with plates and woodcuts, 12 parts in one vol. 4to. cl., with MS. List of Contents by Lord Justice Stirling, F.R.S., £1. 1s 1874-87

CONTENTS:—BELL (Chichester A.) On the Sympathetic Vibrations of Jets, '87: HAUGHTON (Samuel, pr., F.R.S.) New Researches on Sun-heat and Terrestrial Radiation, and on Geological Climates, '81: LLOYD (Humphrey, D.D., F.R.S.) Attempt to reduce the General Laws of the Variations of Temperature at the Earth's Surface, '78: O'REILLY (J. P.) On the Correlation of Lines of Direction on the Earth's Surface, '79: — Catalogue of the Earthquakes in Gt. Britain and Ireland, '84: PRESTWICH (Sir Joseph, F.R.S.) On the Origin of the Parallel Roads of Lochaber, '79: REINOLD (A. W., F.R.S.), and A. W. RÜCKER, F.R.S.: On the Relation between the Thickness and the Surface Tension of Liquid Films, '87: REYNOLDS (Osborne, F.R.S.) On the Refraction of Sound by the Atmosphere, '76: — On the Motion of Water and the Law of Resistance in Parallel Channels, '84: SIEMENS (Sir Charles William, F.R.S.) On determining the Depth of the Sea without the Sounding-Line [an account of the 'bathometer'], '76: TYNDALL (John, F.R.S.) On the Atmosphere as a Vehicle of Sound, '74: — The Action of Free Molecules on Radiant Heat, and its Conversion into Sound, '82.

- 2210 — **ANOTHER COLLECTION**, as under, from the PHILOSOPHICAL TRANSACTIONS, with plates and text-illustrations, 10 parts in one vol. 4to. cl., with MS. List of Contents by Lord Justice Stirling, F.R.S., 16s 1885-1900

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- 2211 — **PHENOMENA**, PAPERS on, from the PHILOSOPHICAL TRANSACTIONS, as under, with plates and text-illustrations, 7 parts in one vol. 4to. cl., with MS. List of Contents by Lord Justice Stirling, F.R.S., 17s 6d 1885-98

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'Elaborating his theory of electricity and defining it more closely, quoting at the same time from Franklin's famous letter to Peter Collinson. During 1747 and 1748 Watson, in conjunction with others, carried out a long series of experiments on 'the velocity of electric matter' across the Thames at Westminster Bridge, at Highbury, and at Shooter's Hill, Watson planning and directing all the operations . . . They conceived that the velocity of electricity was 'instantaneous'.—*D. N. B.*
- 2401 — EXPERIMENTS and OBSERVATIONS tending to illustrate the NATURE and PROPERTIES OF ELECTRICITY, first edition, 8vo. (pp. 67), *sewn*, 7s 6d 1746
'He notices therein that although ice, as well as water, is an 'electric' or non-conductor, moist air conducts, and he explains thereby the failure of electrical experiments in wet weather'.—*D. N. B.*
- 2402 — ANOTHER COPY; with the Sequel, wherein is presumed, by a Series of Experiments expressly [*sic*] for that Purpose, that the SOURCE of the ELECTRICAL POWER, and its Manner of acting are demonstrated (pp. 80), *with folding copperplate of the author's electrical machine, consisting of four glass balls*—2 vols. 8vo. *sewn* (RARE), 17s 6d 1746
'He shows in his Sequel by his own experiments and those of his friend John Bevis that the 'stroke' of the recently discovered Leyden jar was, ceteris paribus, proportional not to its size, but to the conducting surfaces of its coatings. He notices that the 'electric force always describes a circuit', and propounds the theory that in an electrical machine the glass globes, etc. have not the electrical power in themselves, but only serve as 'the first movers and determiners of that power'. He agrees with the Abbé Nollet in regarding electricity as existing normally everywhere in a state of equilibrium, and regards the electrical machine as comparable to a pump which accumulates electricity on the bodies we term 'electrified.' Watson's theory, though less clearly formulated, is hardly distinguishable from that of Benjamin Franklin'.—*D. N. B.*
- 2403 — THIRD EDITION, 8vo. *sewn*, 6s 6d 1746
'Watson's electrical experiments became famous outside scientific circles. George III. (then Prince of Wales), the Duke of Cumberland ['the Butcher'], and other fashionable people went to see them at his house in Aldersgate Street'.—*D. N. B.*
- 2404 **WATSON** (William, *Roy. Coll. of Science*; F.R.S.) TEXT-BOOK OF PHYSICS, *with 564 illustrations*, thick large post 8vo. *cl.*, 5s (p. 10s 6d) 1899
- 2405 **WATTS** (William Marshall, D.SC., F.I.C.) INDEX OF SPECTRA, with Preface by SIR HENRY ENFIELD ROSCOE, F.R.S., *with 9 plates* (1 coloured), 8vo. *cl.* (scarce), 6s 1872
- 2406 — REVISED EDITION, greatly enlarged, with Introduction on the METHODS OF MEASURING and MAPPING SPECTRA, *with folding plate*, 8vo. *cl.* (SCARCE), 15s Manchester, 1889
'The object of this book is to facilitate spectroscopic research by collecting all existing measurements of the spectra of the elements, and presenting them on a uniform scale of wave-lengths'.—*Preface*.
The above edition contains the British Association Wave-Length Tables of the Spectra of the Elements and their Compounds (1884-8), with important additions, and incorporates the results of Thalen's researches in 'Sur le Spectre du Fer', and Fievez's 'Sur le Spectre du Carbone.'
- 2407 — INTRODUCTION to the STUDY OF SPECTRUM ANALYSIS, *with coloured plate and 35 other illustrations*, 8vo. *cl.*, 6s 6d (p. 10s 6d nett) 1904
Including a 'Catalogue of Spectra' (pp. 185-310), and an Appendix (pp. 10) by SIR WILLIAM and LADY HUGGINS.
- 2408 **WEBER** (Wilhelm Eduard; *Prof. Physics, Göttingen*) Ueber die ANWENDUNG der MAGNETISCHEN INDUCTION auf Messung der Inclination mit dem Magnetometer; *with copperplate*, impl. 8vo. (pp. 58), *sewn* (scarce), 8s Göttingen, 1853
Containing a description of the author's induction magnetometer, in which he used the property of terrestrial magnetism to induce electric currents in a moving and closed circuit, to ascertain the magnetic inclination. His method was improved by K. Schering (1832), and H. Wild (1891).
- 2409 — ELEKTRODYNAMISCHE MAASSBESTIMMUNGEN: [II. Abtheilung:] ———, insbesondere WIDERSTANDSMESSUNGEN: [III. Abtheilung:] ———, insbesondere über DIAMAGNETISMUS; *with numerous woodcuts*, 3 parts impl. 8vo. in 1, *sewn*, *with auto. and notes of Prof. Johannes Bosscha* (SCARCE), 15s Leipzig, 1846 [-52]
The first attempt at a system of practical electrical units which eventually resulted in the B. A. Units, and containing the axiom known by the author's name.
'Weber's method involved spinning a coil in a magnetic field which would generate alternate currents'.—*Prof. Silvanus Thompson*.
'Weber's absolute unit of resistance was velocity. The British committee adopted this unit in principle'.—*Prof. Cajori*.
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This classic on wave-motion, which is dedicated to Chladni, first demonstrated the interference of sound-waves by the tuning-fork, the existence of transverse waves in fluids, interference and reflexion of waves, and the formation of stationary waves.
'The subject of stationary waves was first experimentally treated by the Messrs. Weber, in their excellent researches on Wave-motion'.—*Prof. Tyndall*.
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'This work is a monument of industry, untiring and judicious, and for accuracy and completeness has no rival in any other branch of physics'.—*R. S. Obituary Notices*.

V. PHYSICS, *continued* :—

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 Containing the whole of the author's scientific papers, some hitherto unpublished, including his invaluable contributions to telegraphy, the invention of the (reflecting) stereoscope, and the explanation of its principle, an account of 'Wheatstone's Bridge', and his invention of the concertina, a speaking machine, the electric clock, and the rotating mirror determining the time of an electric impulse.
 'To Wheatstone is due the merit of having been the first to render the telegraph available for the public transmission of messages.'—*Prof. Silvanus Thompson.*
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- v. PHYSICAL PAPERS, *ante*.
- 2419 **WHITTAKER** (Edmund Taylor, F.R.S.; *Prof. Mathematics, Edin., late Royal Astronomer of Ireland*) HISTORY OF THE THEORIES OF ÆTHER AND ELECTRICITY, from the Age of DESCARTES to the Close of the XIX. CENTURY, 8vo. cl., 8s 6d (p. 12s 6d nett) Dublin, 1910
 ——— v. MEMOIRS, No. 362.
- 2420 **WIEDEMANN** (Eilhard), und Hermann **EBERT**: PHYSIKALISCHES PRAKTIKUM, mit besonderer Berücksichtigung der physikalisch-chemischen Methoden, 4. vermehrte Auflage; with 366 woodcuts, 8vo. hf. cl., 5s (p. M. 10 sewn) Braunschweig, 1899
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 Professor Willis, like Dr. Whewell, was one of the rare examples of a mathematician who cared for Pointed Architecture, however natural, on its constructional side, such an interest might seem. His study however went far beyond Dr. Whewell's, and he was, with Mr. Freeman, one of the ablest amateur authorities on English architecture, and his advice was of much value in the restoration of many of the Cathedrals.
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- 2423 ——— Die EIGENSCHAFTEN der ELECTRISCHEN MATERIE und des ELECTRISCHEN FEUERS, aus verschiedenen neuen Versuchen erklärt, und nebst etlichen NEUEN MASCHINEN zumeLECTRISIREN; with 4 plates, sm. 8vo. sewn (RARE), 17s 6d Leipzig, 1745
 This work contains a description of the author's electrical machines, in which for the first time a leathern cushion is used, which is pressed against the glass globes by a spring.
- 2424 ——— GEDANKEN von den EIGENSCHAFTEN, WIRKUNGEN und URSACHEN von der ELECTRICITÄT, nebst einer Beschreibung zwe NEUER ELECTRISCHEN MASCHINEN; with 3 plates, sm. 8vo. sewn, or, boards (*rare*), 12s *ibidem*, 1744
 Containing experiments in which the author first showed that the electric spark ignites alcohol, etc.
- ESSAI sur la NATURE de l'ELECTRICITÉ (1748)—v. NOLLET, *ante*.
- 2425 ——— Die STÄRKE der ELECTRISCHEN KRAFT des WASSERS in gläsernen Gefässen, welche durch den Musschenbröckischen [*sic*] Versuch bekannt geworden; with 2 plates, 8vo. sewn (*rare*), 15s *ib.*, 1746
 Including his experiments with three powerful Leyden jars, when he obtained sparks that could be seen at a distance of 200 yards in broad daylight. From their discharge he inferred that the phenomena of lightning and thunder must be the result of an electric discharge on a large scale. Winkler was also the first to mention that the earth was a good conductor of electricity.
 There was no copy of any of the above three works, the only important ones written by the author on electricity, in the Ronalds Library.
- 2426 **WOOD** (De Volson, C.E.) THE ELEMENTS OF ANALYTICAL MECHANICS: Solids and Fluids, 7th Edition, illustrated, 8vo. hf. black morocco neat, cl. sides (*nice copy*), 8s (p. 12s 6d nett in cl.) New York, 1900
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 The most extensive work on experimental physics extant, but containing much analytical speculation. Vols. II—IV are in the latest edition.
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 The first treatise published on the theory of mechanical compensation.

V. PHYSICS, continued :—

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 'In 1878 he began at Pitlochry a series of experiments with Prof. George Forbes on the velocity of light. The final observations, made by a modification of the method of Fizeau, were carried out in 1880-1 between Kelly House and a hill called the Tom, behind Innellan. Young and Forbes found the velocity of white light to be 301,882 kilometres per second, a value slightly higher than those previously obtained by Albert A. Michelson and by Cornu. They also found that blue light travelled at a rate 1·8 per cent. faster than red, a result not yet fully explained.'—D. N. B.
- *v. OPTICAL PAPERS, ante.*
- YOUNG (Thomas, M.D., F.R.S.) MISCELLANEOUS WORKS, 4 vols.—v. Nos. 412-13.**
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 Containing the author's important investigations, giving his discovery of astigmatism, and of the doctrine of interference, which finally established the undulatory theory of light; his theory of the tides, explaining more tidal phenomena than any other advanced before, his theory of capillary action, his researches in physiological optics, making him the founder of that science, etc. etc.
- *v. SCIENTIFIC MEMOIRS, No. 394.*
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- Without giving original investigations of importance, this work is nevertheless valuable for containing a complete account of optics as known at the time, and especially for describing telescopes and microscopes, with full constructional details, and the machinery for grinding lenses and making the metal parts used in their manufacture.
- The author also describes a portable camera obscura having fixed lenses in a tube and an adjustable mirror.
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- 2442 — **PRÉCIS de TÉLÉGRAPHIE sans FIL. Complément de l'Ouvrage: Les Oscillations Électromagnétiques et la Télégraphie sans Fil, traduit par P. BLANCHIN, G. GUÉRARD, et E. PICOT; with 333 illustrations, roy. 8vo. sewn, 7s (p. F. 12 nett)** 1911
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- CONTENTS.—I. Kinematics: II. Dynamics and Statics: III. Kinetics.
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VI. METEOROLOGY and PHYSICAL GEOGRAPHY.

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The successful completion, after twenty-six years' waiting, of the experiments originally begun in the Harriet Shaft of the Dolcoath Mine in Cornwall. The present experiments in County Durham were made at a depth of 1,260 feet, and gave 6.56 for the mean density of the earth.
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The earliest account dealing exclusively with the subject, and especially valuable as the first work laying down rules for the graduation of the thermometer. The above work, which also describes an hygrometer of the author's invention, was unknown to Brunet, Graesse, and others.
The author was the first to start *La Connaissance des Temps* (now issued by the Bureau des Longitudes), the first 6 vols. of which he published between 1679 and 1684.
- 2454 **ÅNGSTRÖM** (Anders Jöns, *Univ. Upsala*) *MÉMOIRE sur la TEMPÉRATURE de la TERRE à différentes PROFONDEURS, à Upsal; with 2 plates*, 4to. (pp. 80), *sewn, with notes by Prof. A. S. Herschel, F.R.S., 7s 6d* *Upsal, 1851*
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"It contains, besides much interesting information in regard to the author's early views, a *résumé* of the results of his own magnetical observations between 1820 and 1835. The deductions from these observations are now for the first time made public."—*Preface*.
It also contains a chapter on the aurora borealis, especially interesting as the author discovered its relation with magnetic variations; and his classification of lightning.
- 2456 **ARISTOTELES**: *De NATURA, aut de Rerum Principiis; de CÆLO; de ORTU et INTERITU; METEOROLOGICA: de ANIMO, de SENSU, et de RESPIRATIONE LIBRI, JOACHIMO PERONIO Interprete, et per NICOLAUM GROUCHIUM correcti et emendati; de MUNDO, GULIELMO BUDÆO Interprete; handsomely printed in italics, with vignette and diagrams*, 6 vols. 4to. in 1, *oaken boards covered with richly pressed leather, metal clasp (one wanting and 2 titles missing, but in FINE CONDITION)*, £1. 7s 6d *Parisis, T. Richardus, 1562-3*
A very handsomely printed and uniform edition. It has on flyleaf an old auto. 'Carolus Scriban', undoubtedly that of CHARLES SCRIBAN, S.J., the celebrated controversialist, 1561-1629.
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The original text, with parallel Latin translation, and a copious commentary.
"Aristotle was the first who collected, in his work 'On Meteors', the popular prognostics of the weather. A number of these were derived from the Egyptians, who had long studied the science as a branch of astronomy, while a large number were the fruit of his own observation, and bear the mark of his singularly acute and reflective mind."—*Alex. Buchan, F.R.S.*
- 2458 **BACON** (Sir Francis, *VISCOUNT ST. ALBAN*): *THE NATURAL and EXPERIMENTAL HISTORY of WINDS, &c. Written in Latine by the Right Honorable Francis Lo: Verulam, Viscount St. Alban, translated by R. G. Gent., first edition*, 18mo. *old calf, rebound (portrait wanting and some corners water-stained); VERY RARE*, £2. 2s *Humphrey Moseley, 1653*
Although Bacon's theory of winds is still based on Aristotelian conceptions, the work is important as collecting all the facts and theories then known on the subject, and especially as the first to point out the deflexion of winds caused by the earth's rotation.
Copies of the above edition fetched at auction £8. 15s in 1909, and £9. 10s in 1902.
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The finest meteorological atlas ever issued. It contains a copious text, Meteorological Services and their Publications, Meteorological Tables, a Bibliography (pp. 4), and a Glossary, and forms Vol. III of Bartholomew's 'Physical Atlas.'
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This was the only volume, printed at the author's private press, out of three proposed to be issued. The work was never published, but presented only to some public institutions and persons interested in naval architecture. "His magnetic observations were superior in accuracy and extent to any earlier work of the kind. They served to determine more precisely the laws of the diurnal variation, as well as to fix the epoch and amount of maximum Western declination in England. . . . The data accumulated by Beaufoy enabled Lamont in 1851 to confirm his discovery of a decennial period in the amount of diurnal variation, by placing a maximum in 1817."—*D. N. B.*
The author was a member of the well-known family of distillers at South Lambeth, and was the first Englishman to ascend Mont Blanc, six days later than Saussure.
- 2461 **BORELLI** (Giovanni Alfonso; *Prof. Philosophy and Mathematics, Pisa*) *HISTORIA et METEOROLOGIA INCENDII AETNÆI Anni 1669, accessit RESPONSIO ad CENSURAS HONORATI FABRI contra Librum de VI PERCUSSIONIS; with folding view on copper, and woodcuts*, 4to. *old calf (RARE)*, 12s 6d *Regio Julio, 1670*

- 2463 **BLODGET** (Lorin) CLIMATOLOGY of the UNITED STATES, and of the Temperate Latitudes of the North American Continent, embracing a full COMPARISON of these with the Climatology of the Temperate Latitudes of EUROPE and ASIA, and especially in Regard to Agriculture, Sanitary Investigations, and Engineering, with Isothermal and Rain Charts for each Season, the Extreme Months, and the Year, and summary Statistics of Meteorological Observations in the United States, condensed from recent Scientific and Official Publications, *with numerous maps and charts (mostly folding)*, impl. 8vo. cl. (SCARCE), 12s Philadelphia, 1857
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- 2525 **HENDERSON** (John) METEOROGRAPHY, or the PERPETUAL WEATHER ALMANAC, containing nearly Fifty of the Signs which occur before every Change of Weather, engraved and coloured from Nature, with 46 coloured plates, sq. 12mo. cl. (*scarce*), 8s Edin., 1841
The author here claims to have discovered how to predict correctly the weather one day, or at most one week, in advance by the state of the sky.
- 2526 **HERSCHEL** (Sir John Frederick William, F.R.S.) METEOROLOGY, first edition, with 3 plates, and diagrams, post 8vo. cl., with reference by Lord Justice Stirling, F.R.S., 4s Edin., 1861
'He gave the earliest discussion of the influence on climate of the earth's orbital eccentricity.'—Miss Agnes M. Clerke.
He also first suggested in this work a black bulb thermometer *in vacuo* for measuring solar radiation.

VI. METEOROLOGY AND PHYSICAL GEOGRAPHY, *continued*.—

- 2528 **HOWARD** (Luke, F.R.S., *friend of Goethe and John Dalton*; *namer of the clouds*) *The CLIMATE of LONDON*, deduced from Meteorological Observations made at different Places in the Neighbourhood of the Metropolis, *first edition, with 6 plates (2 folding), and woodcuts*, 2 vols. 8vo. boards, *uncut (SCARCE)*, 10s 6d 1818-20

- 2529 ——— *SECOND [LAST] EDITION*, much enlarged and improved, in which the Observations are continued to 1830, *with 6 plates (2 folding), and numerous woodcuts*, 3 vols. 8vo. cl. (SCARCE), 17s 6d 1833

'In 1806 Howard began to keep a meteorological register, and published the result of his observations in his 'Climate of London'. His instruments were, from a modern point of view, rude and insufficient; but for the early years of the century his are almost the only observations that have been preserved.'—D. N. B.

- 2530 **HUTTON** (James, M.D., *geologist*) *DISSERTATIONS on different Subjects in NATURAL PHILOSOPHY*, 4to. *old calf (fine tall copy)*; RARE, 16s 6d Edin., 1792

- 2531 ——— *ANOTHER COPY*, cl., 15s

Containing the 'Meteorological Dissertations on Rain and Wind', one of his most important works, wherein he ascribes the formation of rain to the mingling of two strata of air of different temperatures and the subsequent condensation of the mixture; a remark in it also contains the first suggestion of the dry-and-wet-bulb hygrometer. There are also papers on phlogiston, and the laws of matter and motion.

There is no copy of this important work in the Royal Meteorological Society's Library Catalogue (1891).

- 2532 **JAMES** (Lt.-Gen. Sir Henry, R.E., F.R.S.; *Ordnance Survey*) *INSTRUCTIONS for TAKING METEOROLOGICAL OBSERVATIONS*, with TABLES for their CORRECTION, and Notes on Meteorological Phenomena, *with 20 fine plates of Meteorological Instruments, etc., and charts (many folding or coloured)*, roy. 8vo. cl. (scarce), 7s 6d 1860, or, '1

Valuable for including copious descriptions of the meteorological instruments then in use.

- 2533 **KÄMTZ** (Ludwig Friedrich, *Univ. Halle*) *UNTERSUCHUNGEN über die EXPANSIVKRAFT der DÄMPFE nach den bisherigen Beobachtungen*; *with 5 folding tables*, 8vo. boards, *with auto. of Halle*, 1826

Scarce, and unknown to Poggendorff and Heller.

- 2534 **KANT** (Immanuel; *philosopher*) *PHYSISCHE GEOGRAPHIE*, auf Verlangen des Verfassers aus seiner H.S. herausgegeben und zum Theil bearbeitet von FRIEDRICH THEODOR RINK, 2 vols. 8vo. Königsberg, 1802

- 2535 ——— *ZWEITE durchaus umgearbeitete AUFLAGE*, 2 vols. 8vo. in 4, boards, 10s 6d

Hamburg, o. J.—1817

The work containing Kant's meteorological theories, dating from before the period of the *Critique of Pure Reason*.

- 2536 **KIRWAN** (Richard, P.R.I.A., F.R.S.) *ESTIMATE of the TEMPERATURE of DIFFERENT LATITUDES*, 8vo. *original boards, uncut (rare)*, 9s 1787

'It was designed to pave the way for a theory of winds.'—D. N. B. The author adopted Tobias Mayer's formula to express the decrement of temperature from Equator to Pole.

- 2537 **KRAKATOA**, *The ERUPTION of, and subsequent PHENOMENA: REPORT of the ROYAL SOCIETY'S KRAKATOA COMMITTEE*, edited by G. J. SYMONS, F.R.S., *with numerous diagrams, maps, and COLOURED PLATES after W. ASCROFT showing the remarkable Twilight and After-glow Effects at CHELSEA*, 4to. cl., 18s (p. £1.10s nett) 1888

The scientific account of the tremendous volcanic outbreak in the Eastern Archipelago, probably the greatest eruption on record, which destroyed on the spot or by a resulting tidal wave 36,500 lives, and set up a series of concentric atmospheric waves which travelled at least three times round the world. It produced for more than two years, by dust thrown up to an immense height, the most lovely atmospheric effects throughout the world, which were painted for their beauty by an artist at Chelsea, Mr. Ascroft, before anyone had guessed to what cause they were due.

Included in the volume are: Volcanic Phenomena and the Ejected Materials, by J. W. JUDG, F.R.S.; Air Waves and Sounds caused by the Eruption, by LT.-GEN. SIR R. STRACHEY; Seismic Sea Waves, by SIR W. L. J. WHARTON; Unusual Optical Phenomena of the Atmosphere, by the HON. F. A. R. RUSSELL and E. DOUGLAS ARCHIBALD; and Magnetical and Electrical Phenomena, by G. M. WHIFFLE.

- 2538 **KRAMP** (Le Citoyen [Christian]; *Prof. Mathematics, Strasbourg*) *ANALYSE des RÉFRACTIONS ASTRONOMIQUES et TERRESTRES*; *with plate*, 4to. hf. brown calf extra (*very nice copy*), 8s 6d Strasbourg, 1799

'L'Institut proclama cet ouvrage la meilleure production de l'année.'—*Biographie Générale*.

'L'auteur a entrepris d'y donner la solution du problème de la réfraction atmosphérique, en supposant simplement l'élasticité de l'air proportionnelle à la densité, sans y introduire aucune hypothèse étrangère et sans y employer une méthode purement approximative; il y avait une difficulté analytique à vaincre, et l'auteur l'a surmontée comme un habile géomètre.'—*Lalande*.

- 2539 **LA COUDRAYE** (François Célestin de Loynes, Chevalier de) *THEORIE des VENTS*, *Pièce couronnée*, en 1785, par l'Académie Royale de Dijon; *with large folding map*, 8vo. sewn, *uncut (rare)*, 9s Fontenay, 1786

- 2540 **LANGLEY** (Samuel Pierpont; *Smithsonian Inst.*, F.R.S.) *RESEARCHES on SOLAR HEAT and its ABSORPTION by the EARTH'S ATMOSPHERE: a Report of the Mount Whitney Expedition*, *with 22 plates (some folding), 20 diagrams, and map*, large 4to. cl., 10s Washington, 1884

- 2541 ——— *ANOTHER COPY*, cl., *with interesting auto. letter from the author to Edward Whymper*, 12s

'Atmospheric absorption [of solar heat] had never before been studied with such precision as it was by Langley on Mount Whitney. Aided by simultaneous observations from Lone Pine, at the foot of the Sierra, he was able to calculate the intensity belonging to each ray before entering the earth's gaseous envelope—in other words, to construct an extra-atmospheric curve of energy in the spectrum.'—*Miss Agnes M. Clerke*. The author invented the bolometer, which he largely used in the investigations described in the above work.

- 2542 **LEMSTRÖM** (K. S.; *Prof. Physics, Helsingfors*) *L'AURORE BORÉALE: Étude générale des Phénomènes produits par les Courants électriques de l'Atmosphère*; *with 14 plates (some coloured), and 19 text-illustrations*, roy. 8vo. sewn, 3s 6d (p. F. 7.15 nett) 1886

The author was the first to produce (on a small scale) an artificial aurora on Oratunturi mountain, thereby finally proving electric currents to be its cause.

VI. METEOROLOGY AND PHYSICAL GEOGRAPHY, *continued* :—

- 2544 **LESLIE** (Sir John, F.R.S.E., *Univ. Edin.*) SHORT ACCOUNT OF EXPERIMENTS and INSTRUMENTS depending on the RELATIONS of AIR to HEAT and MOISTURE, with plate, 8vo. boards, uncut, 7s 6d *Edin.*, 1813
- 2545 ——— ANOTHER COPY, also : DESCRIPTION of INSTRUMENTS for extending and improving METEOROLOGICAL OBSERVATIONS, with frontispiece, etc.—2 vols. 8vo. in 1, old calf (SCARCE), 12s 6d *ib.*, 1813-20
 'In 1810 he successfully applied the absorbent powers of sulphuric acid to freeze water under the receiver of the air-pump. This is the first recorded achievement of artificial congelation. 'A Short Account of Experiments and Instruments' contains a description of this experiment, and is full of important and original work.'—D. N. B. It also contains his invention of the dry-and-wet-bulb thermometer, first suggested by James Hutton (*q. v. ante*).
- 2546 **LOOMIS** (Elias, *Yale Univ.*) CONTRIBUTIONS to METEOROLOGY ; revised Edition, with numerous plates, 3 vols. roy. 4to. sewn, 9s *New Haven*, 1885-9
 A republication, with large additions, of the author's synoptical weather charts—the first of their kind.
- 2547 **LOVE** (Augustus Edward Hough, F.R.S. ; *Sedleian Prof. Nat. Philos., Oxon.*) SOME PROBLEMS of GEODYNAMICS (Adams Prize Essay, 1911), impl. 8vo. cl., 8s 6d (p. 12s nett) *Univ. Press, Cambridge*, 1911
- 2548 **LUC** (Jean André de, F.R.S. ; *reader to Queen Charlotte*) IDÉES sur la MÉTÉOROLOGIE ; with 2 folding plates, 2 vols. 8vo. nice copy in contemporary French calf extra (SCARCE), 15s 1787
 'Deluc made very numerous experiments on the atmosphere ; inquiring into the modes of production of clouds, rain, hail, dew, etc. . . . He enunciated a point of the highest importance when he endeavoured to show that the amount of water-vapour in the atmosphere, or in any closed vessel, is independent of the density of the air in any other gaseous substance in which it is diffused, a theory which was subsequently proved more clearly by John Dalton.'—Prof. W. J. Harrison.
- 2549 ——— RECHERCHES sur les MODIFICATIONS de l'ATMOSPHERE, contenant l'Histoire critique du Baromètre et du Thermomètre, leur Construction et Usage, principalement à la Mesure des Hauteurs, et à la Correction des Refractions Moyennes, nouvelle Édition ; with folding plates, 4 vols. 8vo. contemporary hf. calf extra, uncut (nice copy), 15s 1784
 The author's most important work, containing his invention of an hygrometer (based on the property of ivory expanding or contracting by the amount of atmospheric moisture), his discovery that water reaches its greatest density at 4° C., and his observations on thawing ice utilised by Dr. Black in his discovery of latent heat. He was the discoverer of the 'dry pile', afterwards improved by Zamboni, and the first to give correct rules for measuring heights by the barometer.
- 2550 **LUZ** (Johann Friederich, *Oberkaplan zu Gunzenhausen*) VOLLSTÄNDIGE und auf Erfahrung gegründete BESCHREIBUNG von allen sowohl bisher BEKANNTEN als auch einigen NEUEN BAROMETERN : wie sie zu verfertigen, zu berichten und übereinstimmend zu machen, dann auch zu meteorologischen Beobachtungen und Höhenmessungen anzuwenden ; nebst Anhang seine THERMOMETER betreffend ; with 6 folding plates, thick 8vo. contemporary calf extra (nice copy) ; rare, 17s 6d *Nürnberg*, 1784
 Containing a very copious description of all the barometers then in use or invented, including the author's own 'Reisebarometer.' There are 94 pp. treating on meteorological observations, and 66 pp. on hypsometry. The last 53 pp. contain an account of quicksilver, spirit, and air thermometers, with instructions how to make them.
- 2551 **MACKENZIE** (George) THE SYSTEM of the WEATHER of the BRITISH ISLANDS ; discovered in 1816 and 1817 from a Journal commencing November, 1802, first edition, with 2 plates, 4to. hf. cl., uncut (SCARCE), 15s *Edin.*, 1818
 'He discovered that the periodical commencement and termination of years of scarcity or abundance are undoubtedly ascertainable with the recurrence of favourable or unfavourable seasons [as, in the days of the Corn Laws, might reasonably have been expected]. In the spring of 1819 Mackenzie succeeded in forming his 'primary cycle of the winds', and received the thanks of the English Board of Agriculture. . . . On receiving a presentation copy the French Institute accorded a special vote of thanks to Mackenzie, and desired Baron v. Humboldt to make a report on it.'—D. N. B.
- 2552 **MAIRAN** (Jean Jacques Dortous de ; F.R.S.) DISSERTATION sur la GLACE, ou Explication Physique de la Glace, et de ses divers Phénomènes ; with fine frontispiece by Ingram, and 5 folding copperplates, 12mo. contemporary mottled calf gilt (VERY FINE COPY) ; rare, 10s *Imprimerie Royale*, 1749
- 2553 ——— NOUVELLE ÉDITION, augmentée d'un Discours sur la CONSTRUCTION et la COMPARAISON des THERMOMÈTRES par GEORGE MARTINE, M.D., F.R.S. ; with 5 folding plates, and table of thermometric scales, 2 vols. large 12mo. in 1, old boards, uncut, 12s 6d *Lucques*, 1757
 'Cette dissertation fut couronnée par l'Académie de Bordeaux.'—*Quénard*. There is no copy of any edition in the Royal Meteorological Society's Library Catalogue, 1891.
- 2554 ——— TRAITÉ Physique et Historique de l'AURORE BORÉALE, première édition ; with 15 copperplates, 4to. contemporary calf gilt (back slightly wormed), 10s *Imprimerie Royale*, 1733
- 2555 ——— SECONDE [DERNIÈRE] ÉDITION, revue et augmentée de plusieurs Éclaircissements ; with 17 plates, 4to. contemporary calf extra, or, old brown calf gilt, newly rebound (FINE COPY), 15s *apud eandem*, 1754
 BEST EDITION of the earliest exhaustive treatise on the aurora borealis, whose height the author estimates as above 100 geographical miles, and which he supposes to be zodiacal light that has come into contact with the atmosphere.
- 2556 **MALLET** (Robert ; T.C.D., F.R.S., M.R.I.A.) THE DYNAMICS of EARTHQUAKES, with 4 folding plates, and woodcuts, 4to. (pp. 64), sewn, 4s *Dublin*, 1846
 The author laid the foundation of the shrinking and wrinkling theory of the earth's crust—a fact unknown to the author's biographer in D. N. B.
- VOLCANIC ENERGY, 2 parts (1872-4)—v. EARTH'S CRUST, *ante*.
- 2557 **MARTINE** (George, M.D.) ESSAYS and OBSERVATIONS on the CONSTRUCTION and GRADUATION of THERMOMETERS, and on the HEATING and COOLING of BODIES, 2nd Edition, with folding plate giving 15 different thermometric scales, and another of the Réaumur thermometer (inserted), sm. 8vo. original calf (one joint cracked, but nice copy), with auto. and MS. notes by Alex. Keith, friend of Sir Walter Scott (rare), 12s 6d *Edin.*, 1772
 Valuable for the plate of thermometric scales. According to Prof. Preston, who only quotes the French translation—v. sub MAIRAN *supra*—the author was the first to find the law of the cooling of a body for differences exceeding 40° or 50° C. The author died of fever in 1741 while attached to the Carthage expedition under Admiral Vernon, the inventor of grog.

VI. METEOROLOGY AND PHYSICAL GEOGRAPHY, *continued* :—

- 2559 **MARTIN (F. P. B.)** MEMOIR on the EQUINOCTIAL STORMS of March-April, 1850: an Inquiry into the Extent to which the ROTATORY THEORY may be applied, *with folding maps*, large roy. 8vo. *cl.* (*scarce*), *with author's inscr. to James Glaisher, F.R.S., and the latter's auto.*, 9s
privately printed at the author's press, 1852
An important investigation, pursued with the countenance of the Board of Admiralty, including leave to copy their Logs.
- 2560 **MAURY (Matthew Fontaine, U.S.N., National Observatory, Washington)** EXPLANATIONS and SAILING DIRECTIONS to accompany the WIND and CURRENT CHARTS; 6th Edition, enlarged, *with 17 plates and maps*, 4to. (pp. 772), *sewn*, 10s 6d
Philadelphia, 1854
A great undertaking, equally important to the practical navigator and for the advance of meteorology in general.—*Humboldt*. The above edition contains the proceedings of the Maritime Conference at Brussels in 1858.
- 2561 **MISCELLANEA CURIOSA**: a COLLECTION of some of the PRINCIPAL PHENOMENA in NATURE, accounted for by the greatest Philosophers of this Age, being the most valuable DISCOURSES, read before the ROYAL SOCIETY, for the Advancement of Physical and Mathematical Knowledge; 2nd Edition (Vol. III 1st Edition), with Discourse of the Influence of the Sun and Moon on Humane Bodies, etc., by R. MEAD, F.R.S., also FONTENELLE'S Preface of the Usefulness of Mathematical Learning, *with frontispiece by v. d. Gucht, and numerous folding plates and map*, 3 vols. post 8vo. *cl.* (RARE), *with autos. of F. Hickman, Christ Church, Oxon. (fl. 1690), and Samuel Roberts, F.R.S.,* £1. 10s
1708-23
- 2562 **SECOND EDITION THROUGHOUT, with frontispiece by v. d. Gucht, and numerous folding plates and map**, 3 vols. post 8vo. *fine copy in old contemporary tree-calf* (RARE), £1. 15s
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Containing the following 'discourses' by HALLEY: Estimate of the Quantity of Vapours raised out of the Sea; True Theory of the Tides; Theory of the Variation of the Magnetic Needle, and the Cause of the Change; Historical Account of the Trade Winds and Monsoons; The Rule of the Decrease of the Height of the Mercury in the Barometer; the Measure of Gold upon Gilt Wire; Account of Dr. R. Hooke's Invention of the Marius Barometer; Proportional Heat of the Sun in all Latitudes; Degrees of the Mortality of Mankind; Discourse concerning Gravity; the Excellency of the Modern Algebra; Analogy of the Logarithmic Tangents to the Meridian Line; Facile Method for constructing the Logarithms; New Methods of finding the Roots of any Equations; Synopsis of the Astronomy of Comets; etc. etc., besides contributions by JOHN COLLINS, J. CRAIG, DAVID GREGORY, A. DE MOIVRE, SIR ISAAC NEWTON, JOHN WALLIS, and many others, e.g., Experiment on the Refraction of the Air, by J. LOWTHROP; Scale of the Degrees of Heat: Letter concerning the Generation of Hail, Thunder, and Lightning, by JOHN WALLIS; Geometrical Dissertation concerning the Rainbow, by EDMUND HALLEY.
The map included in vol. I is the earliest wind and current chart ever published.
- 2563 **ANOTHER EDITION (Vol. I 3rd Ed., Vol. II 1st Ed., and Vol. III 3rd Ed.)**, *with numerous folding plates, and map*, 3 vols. post 8vo. *new hf. calf gilt (front. wanting)*, £1. 7s 6d
1726-08-27
- 2564 **MORGAN (John H., Cambridge Observatory), and John T. BARBER**: ACCOUNT of the AURORA BOREALIS seen near Cambridge, Oct. 24th, 1847, with those of Sept. 21, 1846, and March 19, 1847, seen at the Cambridge Observatory, *with 12 coloured plates*, impl. 8vo. *hf. calf, g. e., with bookplate of Henry B. H. Beaufoy, F.R.S. (SCARCE)*, 15s
Cambridge [1847]
Valuable for giving coloured illustrations of aurora. There is no copy of this work in the Royal Meteorological Society's Library Catalogue, 1891.
- 2565 **MOSSMAN (Robert Cockburn, F.R.S.E.; Argentine Meteorological Office)** The METEOROLOGY of EDINBURGH, *with 8 charts*, 3 parts 4to. *sewn*, 10s 6d (p. £1. 8s 6d nett)
Edin., 1896-1902
- 2566 **PIDDINGTON (Henry, President of Marine Courts, Calcutta)** The SAILOR'S HORN-BOOK for the LAW of STORMS: a Practical Exposition of the Theory of the Law of Storms, and its Uses to Mariners of all Classes in all Parts of the World, shewn by Transparent Storm Cards and Useful Lessons; fifth Edition, enlarged and improved, *with folding charts (2 transparent ones in pocket)*, large post 8vo. *cl.*, 6s
1869
Containing the discovery of the law of storms (together with Sir William Reid, q. v. post). The author also originated in this work the term 'cyclone'.
- 2567 **PORTA (Giovanni Battista della; Napolitano)** De AERIS TRANSMUTATIONIBUS Libri IV, in quo Opere diligenter pertractatur de iis, quae, vel ex Aere, vel in Aere oriuntur: Μετεωρολογίων multiplices Opiniones, qua illustrantur, qua refelluntur. Demum variarum Causæ Mutationum aperiantur, editio princeps; *with arms on title, woodcuts, diagrams, and folding table*, sm. 4to. *contemporary limp vellum, with Cardinal's arms in centre* (RARE), £1. 1s
Rome, B. Zannettus, 1610
'Une météorologie aussi complète qu'il était possible de la former alors par de simples observations sans aucun instrument de mesure. . . . Il faut mentionner spécialement ce qu'il dit sur les marées, dont il s'était occupé à Venise: ce sont probablement les plus anciennes observations de ce genre qui soient arrivées jusqu'à nous. On doit remarquer une table synoptique des transmutions de l'air, qui . . . décele dans l'auteur une facilité éminente de classification.'—*M. Libri*.
- 2568 **POYNTING (John Henry, F.R.S., Prof. Physics, Birmingham)** The MEAN DENSITY of the EARTH, *with 7 folding charts and 17 illustrations*, 8vo. *cl.*, 6s 6d (p. 12s 6d)
1894
This essay, which was awarded the Adams Prize in 1893, 'gives an account of the various experiments, including one by the author, which have been made to determine the mean density of the earth.' It includes a valuable BIBLIOGRAPHY.
- 2569 **PREVOST (Pierre, Genève; de l'Institut; F.R.S.)** Du CALORIQUE RAYONNANT; *with plate*, 8vo. *hf. calf (rare)*, 12s 6d
Genève, 1809
Containing the author's Theory of Exchanges, the forerunner of the Wave Theory of Heat, and its application to several phenomena. Pp. 205-424 treat of solar heat and other meteorological subjects.
It is valuable as further developing Lambert's theory of terrestrial radiation, and having to some extent anticipated the theories of Dr. Wells (q. v. post), who had however developed his theory of dew quite independently of the above work.
The above copy contains a leaf of errata which is nearly always wanting.
- 2570 **RENNELL (Major James, Surveyor-Gen. of Bengal, F.R.S.)** INVESTIGATION of the CURRENTS of the ATLANTIC OCEAN, and of those prevailing between the INDIAN OCEAN and the Atlantic, *with 2 folding maps*, 8vo. *cl.*, *uncut* (RARE), 10s 6d
published for Lady Rodd, 1832
'Rennell devoted an enormous amount of labour and trouble to the study of winds and currents, collecting a great mass of materials from the logs of his numerous friends and correspondents. He was the first to explain the causes of the occasional northerly set to the southward of the Scilly Islands, which has since been known as 'Rennell's Current' [v. second chart supra]. His current charts and memoirs were invaluable at the time.'—*Sir Clements Markham*.

VI. METEOROLOGY AND PHYSICAL GEOGRAPHY, *continued*.—

- 2572 **RATZEL** (Friedrich; *Prof. Geography, Leipzig*) *DIE ERDE und das LEBEN: eine vergleichende Erdkunde; with 46 plates (many finely COLOURED), 21 maps, and 487 other illustrations, 2 vols. large roy. 8vo. original hf. morocco gilt, cl. sides (fine copy), 16s (p. M. 34) Leipzig, 1901-2*
An excellent popular treatise on physical geography.
- 2573 **REID** (Major-Gen. Sir William, R.E., F.R.S.) *ATTEMPT to develop the LAW of STORMS by means of FACTS, arranged according to Place and Time; and hence to point out a CAUSE for the VARIABLE WINDS, with the View to practical Use in Navigation, first edition, with 10 large folding charts, besides fine woodcuts by W. J. LINTON, and diagrams, impl. 8vo. cl., uncut, 14s 1838*
- 2574 ——— *ANOTHER COPY, hf. calf, 12s 6d*
- 2575 ——— *THIRD [LAST] EDITION [enlarged], with 12 charts (10 folding), woodcuts by W. J. LINTON, and diagrams, impl. 8vo. cl., uncut (fresh copy), 12s 1850*
'The work laid down, for the guidance of seamen, those broad and general rules which are known as the 'law of storms.'—Col. Vetch.
The book is no less interesting for containing some of the earliest work in wood-engraving, representing ships in distress, by WILLIAM JAMES LINTON.
- 2576 ——— *THE PROGRESS of the DEVELOPMENT of the LAW of STORMS, and of the VARIABLE WINDS, with their practical Application to Navigation, with 6 plates and charts, and numerous diagrams, impl. 8vo. cl., uncut, 10s 6d 1849*
- 2577 ——— *ANOTHER COPY, hf. bound, 9s*
Forming a complement to the foregoing 'Attempt'.
'The object of this volume is to show the progress made in the development of the Law of Storms, and to point out how the same law accounts for variable winds, and for many of those changes of the wind which, until recently, have baffled explanation.'—Introduction.
- 2578 **RESTA** (Francesco, a Talleacotio, Cler. Reg. Minor.) *METEOROLOGIA: de Igneis, Aereis Aqueisque Corporibus; with engraved title, thick 4to. (pp. 996), old Italian vellum (browned and title stamped), 15s Rome, Fr. Moneta, 1644*
One of the most complete treatises on meteorology then published, including also oceanography and seismology. The work was unknown to Poggendorf.
- 2579 **RÜCKER** (Sir Arthur William, F.R.S.), and Sir Thomas Edward THORPE, F.R.S.: *A MAGNETIC SURVEY of the BRITISH ISLES for the Epoch January 1, 1886 (Bakerian Lecture), with 14 plates (2 folding), and 31 diagrams, roy. 4to. hf. roan (cracked), 10s 1889*
The third magnetic survey of Gt. Britain, being preceded by those of Sir Edward Sabine of 1834-8 and 1857-62. The authors were awarded the Royal Society's Royal Medal for the above work.
- 2580 **SABINE** (General Sir Edward, R.A., F.R.S.) *ACCOUNT of EXPERIMENTS to DETERMINE the FIGURE of the EARTH, by means of the Pendulum vibrating Seconds in different Latitudes; as well as on various other Subjects of Philosophical Inquiry, 4to. hf. calf, with author's inscr. (SCARCE), 17s 6d 1825*
'An enduring monument of his indefatigable industry, his spirit of inquiry, and wide range of observation. The work was honoured by the award to him of the Lalande gold medal of the Institute of France in 1826.'—D. N. B.
The facts contained in the work enabled GAUSS to lay down his theory of terrestrial magnetism.
It also contains: Hydrographical Notices; Experiments for determining the Variation in the Intensity of Terrestrial Magnetism; and Atmospheric Notices.
- 2581 ——— *REPORT on the VARIATIONS of the MAGNETIC INTENSITY observed at different Points of the EARTH'S SURFACE, with 3 folding plates, 8vo. cl., uncut (scarce), with inscr. 'George Rennie, Esq. from the Author', 7s 6d 1838*
This work was unknown to the author's biographer in D. N. B. It contains an historical account of observations from Rossel, 1791, to 1836.
- 2582 **SAUL** (Edward, Magd. Coll., Oxon., Rector of Harlaston) *HISTORICAL and PHILOSOPHICAL ACCOUNT of the BAROMETER, or WEATHER-GLASS, wherein its Reason and Use, the Theory of the Atmosphere, and the Causes of its different Gravitation, are assign'd and explain'd, and a modest attempt from thence made towards a RATIONAL ACCOUNT and PROBABLE JUDGMENT of the WEATHER; 2nd [last] Edition, 8vo. sewn, or, old calf (joints cracked); rare, 10s 1735*
Dedicated to the 3rd Duke of Rutland, father of the popular and inn-sign'd Marquis of Granby.
- 2583 **SAUSSURE** (Horace Bénédicte de, de Geneve; first climber of Mont Blanc) *ESSAIS sur l'HYGROMÉTRIE. I. Description d'un nouvel Hygromètre comparable. II. Théorie de l'Hygrométrie. III. Théorie de l'Évaporation. IV. Application des Théories précédentes à quelques Phénomènes de la Météorologie, première édition; with 2 copperplates, 4to. old calf (joints cracked); RARE, 15s Neuchâtel, 1783*
- 2584 ——— *RÉIMPRESSION: with 2 copperplates, thick 8vo. boards, uncut, 10s 0d ib., 1783*
Containing the author's invention of the hair hygrometer. 'His ingenious and extensive researches, conducted with the simple hair hygrometer, entitle him to be considered the founder of hygrometry.'—Alexander Buchan.
'Un des beaux ouvrages dont la science se soit enrichie à la fin du XVIII^e siècle.'—Cuvier.
'C'est là que Saussure fit connaître son importante découverte que l'air se dilate et devient spécifiquement plus léger à mesure qu'il se charge d'humidité.'—Biogr. Gén.
v. TOALDO, post.
- SCOTTISH METEOROLOGICAL SOCIETY—v. No. 199.**
- 2585 **SUPAN** (Alexander, Herausgeber von Petermanns Mittheilungen) *GRUNDZÜGE der PHYSISCHEN ERDKUNDE, 2. umgearbeitete Auflage; with 20 coloured maps, and 203 text-illustrations, 8vo. original hf. morocco, 6s (p. M. 16) Leipzig, 1896*
- 2586 **SWINDEN** (Johan Hendrik van; Univ. Franeker) *DISSERTATION sur la COMPARAISON des THERMOMÈTRES; with copperplate, and large folding table, 8vo. sewn, uncut (rare), 10s 6d Amsterdam, 1778*
Valuable for containing accounts of 27 thermometric scales, most of which are now forgotten, and can only be traced from the above and a few other contemporary works.

VI. METEOROLOGY AND PHYSICAL GEOGRAPHY, *continued* :—

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 Containing an early account of an hygrometer and of the barometer; also a description of the diving bell used by the author in an attempt to raise the ship Florida, a relic of the Armada, wrecked off the Isle of Mull. The plate of arms, which is contained in the above copy, is often missing.
- THE HYDROSTATICKS (1672)—v. Nos. 2314-6.
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 This very curious and interesting work, valuable for its METEOROLOGICAL PORTION, is divided into six parts, to represent the days of Creation. It is a kind of encyclopædia of natural and mythical history, interspersed with curious stories and quotations. In the chapter on Earthquakes is a curious reference to 'AMERICA, a conjecture how it came at the first to be unknown.' On page 443 we read 'In the Kingdom of Congo be certain great Dragons with wings, in bignesse like to rams, . . . of blew and green colour.'
 'An extremely interesting and popular treatise on meteorology. Some of the notions are very funny.'—*G. J. Symons, F.R.S.*
- SYDNEY METEOROLOGICAL OBSERVATIONS**—v. No. 141.
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- MONTHLY METEOROLOGICAL MAGAZINE—v. No. 204.
- 2595 **TOALDO** (Abate Giuseppe; *Prof. Astronomy and Meteorology, Padua*) ESSAI MÉTÉOROLOGIQUE sur la VÉRITABLE INFLUENCE des ASTRES, des Saisons et Changemens de Temps; nouvelle Edition, rendue meilleure et beaucoup augmentée; traduit par JOSEPH DAQUIN, avec les PRONOSTICS d'ARATUS, Chambery, 1784: **Saussure** (Horace Bénédicte de) ESSAIS sur l'HYGROMÉTRIE; with 2 copperplates, Neuchâtel, 1783: DÉFENCE de l'HYGROMÉTRIE à CHEVEU; with plate, Genève, 1788—3 vols. 4to. in 1, contemporary French calf extra, with old bookplate 'de Lamothe, médecin de Bordeaux', £1. 10s Chambery, 1783-8
 'Les découvertes de Toaldo sur l'influence des astres et de la lune en particulier, sur les saisons, lui assurrèrent un rang distingué parmi les physiciens. Ayant remarqué qu'au bout de 18 ans les phénomènes météorologiques se reproduisaient dans le même ordre, il dressa trois de ces périodes et leur donna le nom de *Saros*. Les astronomes les appelèrent depuis *cycles toaldins*.'—*Biogr. Gén.*
- 2596 **VIERI** [detto il VERINO II°] (Francesco di Giovambattista de', da Firenze) TRATTATO nel quale si contengono i Tre Primi Libri delle METHEORE, nuovamente ristampati, e da Lui ricorretti con l'Aggiunta del Quarto Libro, 12mo. fine copy in old vellum (rare), 15s Firenze, G. Marescotti, 1582
 Second and last edition of this early treatise on meteorology, and the only one containing the fourth book. Besides meteorological subjects, it treats of comets, the tides, and the rainbow. Book IV (pp. 187-424) treats of Aristotelian meteorology and physics.
 The author is not noticed by Poggendorff.
- 2597 **WALKER** (Edward, *Cheltenham Coll.*) TERRESTRIAL and COSMICAL MAGNETISM (Adams Prize Essay, 1865), with 8 folding charts, besides diagrams, 8vo. cl. (scarce), 15s Cambridge, 1866
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WASHINGTON ASTRONOMICAL and METEOROLOGICAL OBSERVATIONS—v. No. 210.

VI. METEOROLOGY AND PHYSICAL GEOGRAPHY, *continued* :—

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apud eosdem, 1815
He demonstrated after a series of well-arranged observations made in the garden in Surrey of his friend James Dunsmure, that dew is the result of a preceding cold in the substance in which it appears, and that the cold which produces dew is itself produced by the radiation of heat from those bodies upon which dew is deposited. For this, the first exact explanation of the phenomena of dew, he was awarded the Rumford medal of the Royal Society. —D. N. B.
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VII. CHEMISTRY.

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'Il traça les préceptes de la science dont Lavoisier et Scheele jetèrent les bases, et le premier il établit une fabrique de sel ammoniac. . . Il inventa des procédés pour dorer les pièces d'horlogerie, teindre les draps de deux couleurs, blanchir la soie jaune sans l'écruer, purifier le salpêtre, et enlever à la féculle du marron d'Inde son principe amer.'—F. Hoefler.

The above works belonged to Richard Watson, F.R.S., the unabashed absentee Bp. of Llandaff, bear his Calgarth Park booklabel, and were doubtless used by him when victoriously cramming for his chemistry professorship at Cambridge.

- 2616 **BAUMERT** (George, Univ. Halle), **Max Eugen Hermann DENNSTEDT**, Hamburg, und **F. VOIGTLÄNDER**: LEHRBUCH der GERICHTLICHEN CHEMIE, 2. gänzlich umgearbeitete Auflage; with 151 illustrations (some coloured), 2 vols. roy. 8vo. sewn, 12s (p. M. 21)
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- 2645 **BISCHOFF** (C. A., *Polytechnikum, Riga*) **MATERIALIEN der STEREOCHEMIE**, in Form von Jahresberichten, 1894-1902, mit systematischem Inhaltsverzeichnis und alphabetischem Sachregister, 2 vols. large 8vo. *sewn, unopened*, £2. 5s (p. M. 90) Braunschweig, 1904
 Intended as a supplement to Bischoff and Walden's 'Handbuch der Stereochemie,' the 'Chemisches Zentralblatt,' and to the 'Jahresberichte über die Fortschritte der Chemie.'
- 2646 **BONI** (Pietro Antonio): **INTRODUCTIO in Divinam CHEMIE ARTEM Integra MAGISTRI BONI Lombardi Ferrariensis Physici**, nunc primum integra in Lucem edita, sm. 4to. *old limp vellum* (corner of title with imprint torn off); RARE, 18s 6d [? Argentorati, 1602]
 Including the author's best-known work, *Margarita Preciosa*, according to Mr. A. E. Waite 'an exceedingly comprehensive, conscientious treatise on the history, theory, and practice of alchemy, written after the manner of the scholastics, and naturally containing much irrelevant matter, but for all this very useful and even interesting. The difficulties of the art are manfully faced, the sophistications, deceptions, and contradictions of its professors are reprov'd, and the author attempts to show that alchemy is in reality a short art and a slight practice, though full of truth and nobility.'

VII. CHEMISTRY, continued:—

- 2648 **BLACK** (Joseph, M.D., *Prof. Chemistry, Univ. Edin.*) EXPERIMENTS upon MAGNESIA ALBA, QUICK-LIME, and other ALCALINE SUBSTANCES; with ESSAY on the COLD produced by EVAPORATING FLUIDS, and of some other MEANS of PRODUCING COLD, by WILLIAM CULLEN, M.D., 12mo. *contemporary calf* (rare), £1. 10s
Edin., William Creech, 1782

'As a model for philosophical investigation this essay was, by Brougham and Robison, placed second only to the 'Optics' of Newton. Its importance in chemical history is twofold. By setting an example of the successful use of the balance, it laid the foundation of quantitative analysis; and by the distinction of qualities conveyed in it between 'fixed' and common air, it opened the door to pneumatic chemistry. Up to that time the causticity of alkalis after exposure to strong heat had been universally attributed to an acrid principle derived from fire. Black showed that they lost instead of gained by calcination; and that what they lost was a kind of 'air' previously 'fixed' in them, and neutralising by its acid qualities their native causticity. The effervescence of 'mild' and non-effervescence of 'caustic' alkalies when dissolved in acids were alleged in countenance of the new theory, which, nevertheless, encountered a vigorous though futile opposition in Germany. It was pointed out in the same remarkable treatise that magnesia, until then generally held to be a variety of lime, formed, with the same acids, wholly different salts, and was consequently to be regarded as a distinct substance.'—*D. N. B.*

The second essay contains the author's great discovery of 'latent heat', and his theory of 'specific heat', which formed the basis of the discoveries of J. R. v. Mayer, Helmholtz, and Joule.

v. EDINBURGH ESSAYS, Nos. 283-4.

- 2649 — LECTURES on the ELEMENTS of CHEMISTRY, delivered in the University of Edinburgh, now published from his MSS. by JOHN ROBISON, Professor of Natural Philosophy, Edinburgh, with *fine portrait on copper, and 3 plates, 2 vols. 4to. scored calf gilt (sound copy)*; VERY RARE, £2. 5s
Edin., 1803

'During above 30 years he inculcated the elements of chemistry upon enthusiastic and continually growing audiences. It could not be otherwise', Robison wrote in 1803. 'His personal appearance and manner were those of a gentleman, and peculiarly pleasing. His voice in lecturing was low, but fine; and his articulation so distinct that he was perfectly well heard by an audience consisting of several hundreds. His discourse was so plain and perspicuous, his illustrations by experiments so apposite, that his sentiments on any subject never could be mistaken, even by the most illiterate; and his instructions were so clear of all hypothesis or conjecture, that the hearer rested on his conclusions with a confidence scarcely exceeded in matters of his own experience.' His lectures had thus a powerful effect in popularising chemistry; and attendance upon them even came to be a fashionable amusement.'—*D. N. B.*

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AN EXTREMELY INTERESTING MANUSCRIPT, possibly the one from which the printed work, edited by John Robison, F.R.S.E., was published in 1803, which latter itself has now become very rare. According to *D. N. B.* 'his lectures were published by Robison in 1803 from notes after his death, eked out by those of his hearers, in two quarto volumes.' If not actually the original MS., it may safely be said to be the ONLY MANUSCRIPT COPY THAT HAS EVER HAPPENED FOR SALE, and should be of great interest for comparison with the printed work.

- 2651 **BLOUNT** (Bertram, F.I.C.) PRACTICAL ELECTRO-CHEMISTRY, with 54 woodcuts, 8vo. cl. (o. p.), 1901
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Added are the same author's 'Opuscula Omnia, quæ hactenus in Lucem prodierunt,' Hagae, 1788.

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VII. CHEMISTRY, continued:—

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- Prof. E. v. Meyer mistakenly states that the first edition was published anonymously.
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- ‘In his *Sceptical Chymist* he criticises the Aristotelian and the alchemistic elements, which were still accepted by many of the iatro-chemical age. He enunciated the axiom that only what can be demonstrated to be the undecomposable constituents of bodies are to be regarded as elements; and he considered it hazardous to advance opinions as to the properties of the elements in general, without having first obtained a firm foundation in their actual properties individually. With a far-seeing glance he looked forward to the discovery of a much greater number of elements than was at that time assumed, at the same time contending that many of the substances then held to be elementary were not really so. . . . Boyle was the first to state with perfect clearness that a chemical compound results from the combination of two constituents, and that it possesses qualities totally different from those of either its constituents alone, thus enabling him to draw a sharp distinction between mixtures and chemical compounds.’—Prof. E. v. Meyer.
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 printed for the author, 1781
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- CHEMICAL GAZETTE**—v. No. 32.
 ——— NEWS—v. Nos. 36-7.
 ——— REVIEW—v. No. 38.
 ——— SOCIETY'S JOURNAL and PROCEEDINGS—v. Nos. 39-42.
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- 2695 **DAUBENY** (Charles Giles Bridle, M.D., F.R.S., Prof. Chemistry, Oxon.) INTRODUCTION to the ATOMIC THEORY, comprising the Opinions of the most distinguished ancient and modern Philosophers, with Respect to the Constitution of Matter, first edition, 8vo. boards, or, cl. (scarce), 10s 6d Oxford, 1831
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Lavoisier's contributions (pp. 113) comprise: 'De l'action du feu animé par l'air vital sur les substances minérales les plus réfractaires', 'Sur l'effet que produit sur les pierres précieuses un degré de feu très-violent', and 'Sur un moyen d'augmenter considérablement l'action du feu et de la chaleur dans les opérations chimiques'. There is also an additional memoir by General MEUSNIER DE LA PLACE.
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—— EXPERIMENTAL RESEARCHES in CHEMISTRY and PHYSICS (1859)—v. No. 296.
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This well-known chemical cyclopædia forms a new edition of the 'Handwörterbuch' by Liebig, Wöhler and Poggendorff (1842-64), and that by Kolbe and Fehling (1843-64).

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- The above copy belonged to RICHARD WATSON, D.D., F.R.S. (1737-1816), absentee Bp. of Llandaff, and sometime professor of chemistry in Cambridge University, to which Chair he was appointed before he had ever thought of the science, and bears his Calgarth Park booklabel.
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— v. GLAUBER, *infra*.

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- 3039 ——— TRATTATO PRATICO di FOTOGRAFIA: Esposizione compiuta dei PROCESSI relativi al DAGHEROTIPO, ecc.; Versione dal francese di C. J., con Appendice del Traduttore, NOTIZIE e CENNI sui DIVERSI STROMENTI FISICI, ed una LEZIONE PRATICA sull' ELETTRODORATURA ed ELETTROARGENTATURA dei METALLI; *with woodcuts*, roy. 8vo. (pp. 216), *sewn (scarce)*, 9s *Torino*, 1845

The most complete work then published on daguerreotypy.

- 3040 ———, et Noël Marie Paymal LEBEBOURS: DERNIERS PERFECTIONNEMENTS apportés au DAGUERRETYPE; 3^e Édition, augmentée de l'Emploi de l'Iodure de Brome sans Boîte à Iode; d'un Procédé pour COLORER les ÉPREUVES et les fixer à Froid; de leur Réproduction en Cuivre, et de leur Dorure par la Galvanoplastie, etc., et suivie d'une Notice sur l'Emploi de l'Eau Bromée, par HIPPOLYTE LOUIS FIZEAU; *with folding plate*, roy. 8vo. *sewn (SCARCE)*, 17s 6d *apud auctorem*, 1842

Containing the discovery of the gold-toning of daguerreotypes.

— v. DAGUERRE, *ante*.

- 3041 **GILLMORE** (Lt.-Col. Q. A., U.S. Engineers) PRACTICAL TREATISE ON LIMES, HYDRAULIC CEMENTS, and MORTARS; 13th Edition, *with frontispiece and 57 illustrations*, 8vo. *cl.*, 8s 6d (p. \$4. nett) *New York*, 1902

Containing original experiments and researches.

WITH MS. NOTES BY AN EARLY ENGLISH BREWER:

- 3042 **HAGECIUS** [**HAJEK**] ab **HAYCK** (Thaddæus; M.D.) De CERVISA, eiusque CONFICIENDI RATIONE, Natura, Viribus, et Facultatibus, Opusculum; *interleaved with old writing paper*, 12mo. *fine copy in contemporary vellum (very rare)*, £4. 10s

Francofurdi [ad M.], Andreas Wechel, 1585

One of the earliest, if not the earliest, printed works on BREWING, and containing numerous and interesting references to English Beer. The above copy is specially interesting for containing at end 12 pp. of MS. in a contemporary English hand, containing recipes for making beer.

The author, ignored both in *Biographie Universelle* and *Biographie Générale*, and other standard biographical works, was a native of Prague, a teacher of mathematics at the Carolinum there, and physician-in-ordinary to the Emperors Maximilian II. and Rudolph II. He died in 1600.

- 3043 **HAIGH** (James, *Silk and Muslin Dyer, Leeds*) The DYER'S ASSISTANT in the Art of DYING [*sic*] WOOL and Woolen Goods, extracted from the Philosophical and Chymical Works of Ferguson, Dufay, Hellot, Geoffery [*sic*], Colbert, and de Julienne, translated from the French, with Additions and PRACTICAL EXPERIMENTS, first edition, sm. 8vo. *fine and tall copy in contemporary hf. calf, with Calgarth Park booklabel of Richard Watson, absentee Bp. of Llandaff (rare)*, 12s 6d *Leeds*, 1778

- 3044 ——— LONDON RE-ISSUE, sm. 8vo. *hf. bound*, 7s 6d [1778]

The first practical English treatise on the subject.

- 3045 **HANAUSEK** (Thomas Franz, *Prof. Nat. Hist., Vienna*) The MICROSCOPY of TECHNICAL PRODUCTS, revised by the Author and translated by ANDREW L. WINTON, with the Collaboration of KATE G. BARBER, *with 276 illustrations*, roy. 8vo. *cl.*, 12s 6d (p. £1. 1s nett) *New York*, 1907

- 3046 **HAUDICQUER** de **BLANCOURT** (Jean) L'ART de la VERRERIE, où l'on apprend à faire le Verre, le Cristal, et l'Email; la Manière de faire les Perles, les Pierres Précieuses, la Porcelaine, et les Miroirs; la Méthode de peindre sur le Verre et en Email; de tirer la Couleur de Métaux, Minéraux, Herbes, et Fleurs; nouvelle Édition, augmentée d'un Traité des Pierres Précieuses; *with 8 copperplates, illustrating contemporary tools, furnaces, etc.*, 2 vols. 12mo. *contemporary French mottled calf extra (FINE COPY)*; rare, 15s 1718

'Accusé d'avoir contrefait et fabriqué d'anciens titres de noblesse, Haudicquer fut condamné aux galères en 1701. Cette peine fut ensuite commuée en une prison perpétuelle.'—*Biogr. Gén.*

- 3047 **HELLOT** (Jean; F.R.S.) L'ART de la TEINTURE des LAINES et des ÉTOFFES de LAINE, en Grand ou Petit Teint, avec une Instruction sur les Débouillis, première édition, 12mo. *old calf gilt (RARE)*, £1. 1s 1750

- 3048 ——— NOUVELLE ÉDITION, 12mo. *contemporary boards*, 12s *Didot fils*, 1786

Important as the first work which created a scientific basis for the art of dyeing.

- 3049 ———, Pierre Joseph **MACQUER**, and **LE PILEUR** d'APLIGNY: The ART of DYING [*sic*] WOOL, SILK, and COTTON, translated from the French, *with 6 copperplates*, 8vo. *calf neat, with auto. of Sir Thomas Wardle on title (RARE)*, £1. 1s 1789

- 3050 ——— ANOTHER COPY, *old calf*, 18s 6d

'Chemists, among whom STAHL, HELLOT, and MACQUER must be particularly mentioned, endeavoured not only to prepare and apply colours by practical recipes, but also to aid the manufacturer by speculations on the modes in which dyeing processes are brought about.'—*Prof. E. v. Meyer*.

- 3051 **HERRING** (Robert) PAPER and PAPER MAKING, Ancient and Modern, with Introduction by GEORGE CROLY, pr., LL.D., 5 plates, and 25 samples, 8vo. *cl. (scarce)*, 6s 1855

- 3052 **HOMASSEL** (M.; *chef des teintures de la manufacture des Gobelins*) COURS THÉORIQUE et PRATIQUE sur l'ART de la TEINTURE en Laine, Soie, Fil, Coton, Fabrique d'Indienne en Grand et Petit Teint; suivi de l'Art du Teinturier-Dégraisseur, du Blanchiment des Toiles, Fils, Coton, Chanvre, Lin, Gravures, etc., par l'Acide Muratique Oxygéné; 3^{me} [dernière] Édition [par E. J. B. BOUILLON-LAGRANGE]; *with plate*, 8vo. *calf gilt, g. e. (rare)*, 15s 1818

IX. CHEMICAL TECHNOLOGY, INCLUDING PHOTOGRAPHY, *continued*:—

- 3054 **HERSCHEL** (Sir John Frederick William, F.R.S.) On the CHEMICAL ACTION of the RAYS of the SOLAR SPECTRUM on PREPARATIONS of SILVER, and other Substances, both Metallic, and non-Metallic, and on some PHOTOGRAPHIC PROCESSES, *with 2 plates, 4to.* (pp. 59), *sewn (scarce)*, 10s 6d 1840
- This paper, which was awarded the Royal Society's gold medal, 'announced the use as a fixing agent of hyposulphite of soda, the solvent power of which on the silver he had discovered in 1819; it originated the application to photographic prints of the terms 'positive' and 'negative', adverted to 'lavender grey' rays beyond the violet, and described experiments on the 'chemical analysis of the solar spectrum', by which an important new field was thrown open to research.'—*Miss Agnes M. Clerke.*
- 3055 **HIGGINS** (Bryan, M.D.) EXPERIMENTS and OBSERVATIONS made with the View of Improving the Art of composing and applying CALCAREOUS CEMENTS, and of preparing QUICK-LIME; Theory of these Arts; and Specification of the AUTHOR'S cheap and durable CEMENT, for Building, Incrustation, or Stuccoing, and Artificial Stone, *first edition, 8vo. boards, uncut*, 10s 6d 1780
- 3056 ——— [SECOND EDITION, revised], 8vo. *hf. red morocco, t. e. g. (stamp on title)*, 9s 1780
- An account of the author's patented invention of a new and cheap cement, which probably helped towards the architectural Age of Shams. The work was translated into Italian. The second edition is unknown to bibliographers.
- 3057 **HIMLY** (August Friedrich Karl, *Univ. Göttingen*) De CAOUTCHOUK ejusque DISTILLATIONIS SICCAE PRODUCTIS et ex his de CAOUTCHINO, novo Corpore ex Hydrogenio et Carboneo composito; *with folding plate, 8vo. boards, with INSCR. TO FARADAY (see below); scarce*, 10s 6d 1835
- 'Faraday institutonis Londinensis professori chemico hocce libellum omni, qua par est, observantia offert auctor.'—*Inscr. on flyleaf.* Does the author here foreshadow the production of synthetic india-rubber?
- 3058 **HOME** (Francis, M.D., *Univ. Edin.*) EXPERIMENTS on BLEACHING, 8vo. *sound copy in contemporary calf, with Calgarth Park booklabel of Richard Watson, F.R.S., absentee Bp. of Llandaff (RARE)*, £1. 1s *Edin., 1756*
- 'An essay to which a gold medal was awarded by the trustees for the improvement of manufactures in North Britain, and which was translated into French and German.'—*D. N. B.*
- 3059 **HOVESTADT** (H.) JENA GLASS, and its Scientific and Industrial Applications, translated and edited by J. D. EVERETT, F.R.S., and ALICE EVERETT, 8vo. *cl. (back of cover stained)*, 10s (p. 15s nett) 1902
- Including chapters on the optical properties of glass (pp. 23-81), its electric and magneto-optic properties (pp. 372-85), and notes (arsenic in glass, etc.) by PROF. EVERETT.
- 3060 **HÜBNER** (Julius, *Municipal School of Technology, Manchester*) BLEACHING and DYEING of VEGETABLE FIBROUS MATERIALS, with Introduction by RAPHAEL MELDOLA, F.R.S., *with 96 illustrations (including folding plates)*, 8vo. *cl.*, 9s (p. 14s nett) 1912
- 3061 **HUNT** (Robert, F.R.S.) POPULAR TREATISE on the ART of PHOTOGRAPHY, including DAGUERRETYPE, and all the NEW METHODS of PRODUCING PICTURES by the Chemical Agency of LIGHT, *first edition, with frontispiece and 29 woodcuts, 8vo. sewn (SCARCE)*, 18s *Glasgow, 1841*
- First edition of the first work on photography printed in this country.
- 3062 **HURST** (George H., F.C.S.) SILK DYEING, PRINTING, and FINISHING, *with 21 woodcuts, and 66 coloured patterns of dyed silks*, cr. 8vo. *cl.*, 3s 6d (p. 7s 6d) 1892
- 3063 ——— SOAPS: a Practical Manual of the Manufacture of Domestic, Toilet, and other Soaps; 2nd Edition, *with 66 illustrations, 8vo. cl.*, 7s 6d (p. 12s 6d nett) 1907
- INCORPORATED GAS INSTITUTE**—v. No. 75.
- 3064 **JACQUEMIN** (Georges) Les FERMENTATIONS RATIONNELLES (Vins, Cidres, Hydromels, Alcools); *with 17 portraits and plates (some coloured), and numerous other illustrations*, thick impl. 8vo. *cl.*, 7s 6d (p. F. 15 nett) *Malzéville, 1900*
- 3065 **JETTEL** (Wladimir) Die ZÜNDWAAREN-FABRICATION nach dem heutigen Standpunkte; *with 78 woodcuts*, roy. 8vo. *sewn*, 6s (p. M. 10) *Wien, 1897*
- 3066 **JOHNSTONE** (Sydney J., *Imperial Inst.*) The RARE EARTH INDUSTRY, including the Manufacture of Incandescent Mantles, Pyrophoric Alloys, and Electrical Glow Lamps; and the Industry of Radioactive Substances, by ALEXANDER S. RUSSELL, *with 42 illustrations*, roy. 8vo. *cl.*, 5s 6d (p. 7s 6d nett) 1915
- 3067 **KERSHAW** (John Baker Cannington, F.I.C.) Die ELEKTROLYTISCHE CHLORATINDUSTRIE, übertragen von MAX HUTH, mit Anhang der wichtigsten PATENTE; *with 39 illustrations, and 3 tables*, roy. 8vo. *sewn*; 3s 6d (p. M. 6) *Halle a. S., 1905*
- 3068 **LALANDE** (Joseph Jérôme le François de; *de l'Institut*; F.R.S.; *astronomer*) ART de FAIRE le PAPIER; *with 14 copperplates*: ——— le PARCHEMIN; *with 2 copperplates*
- RÉAUMUR** (René Antoine Ferchault de; *de l'Institut*, F.R.S.) ART de l'ÉPINGLIER, avec des Additions par DUHAMEL DU MONCEAU, et des Remarques extraites des Mémoires de M. PERRONET; *with 7 copperplates*: **DUHAMEL du MONCEAU** (Henri Louis; *de l'Institut*; F.R.S.) ART du CHARBONNIER; *with plate* — in one vol. roy. folio, *contemporary hf. calf gilt (slightly water-stained, and binding damaged)*; *rare*, £2. 10s 1761
- Valuable as one of the earliest and fullest accounts of paper-making. The above works have as collective title Descriptions des Arts et Métiers faites ou approuvées par l'Académie Royale des Sciences.
- 3069 **LEGROS** (Lucien Alphonse, M.I.C.E.), and John Cameron GRANT: TYPOGRAPHICAL PRINTING-SURFACES: the Technology and Mechanism of their Production, *with 609 illustrations*, roy. 8vo. (pp. 756), *cl.*, £1. 7s 6d (p. £2. 2s nett) 1916
- 3070 **LINDNER** (Paul) MIKROSKOPISCHE BETRIEBSKONTROLLE in den GÄRUNGSGEWERBEN, mit Einführung in die technischen Biologie, Hefeneinkultur und Infektionslehre, 3. neubearbeitete Auflage; *with 4 plates and 229 woodcuts*, roy. 8vo. *cl.*, 8s (p. M. 17) *Berlin, 1901*
- LIVERPOOL and MANCHESTER PHOTOGRAPHIC JOURNAL**—v. No. 120.

IX. CHEMICAL TECHNOLOGY, INCLUDING PHOTOGRAPHY, *continued*.—

- 3072 **LE GRAY** (Gustave, *peintre et photographe*) PHOTOGRAPHIE: Traité nouveau, théorique et pratique, des Procédés et Manipulations sur PAPIER SEC et HUMIDE, et sur VERRE au Collodion et à l'ALBUMINE, première édition, roy. 8vo. *sewn* (SCARCE), £1. 1s

Lerebours et Secretan [1852]

This work, besides being a *résumé* of everything then known of photography, gives several new processes; but is of still greater interest in connexion with the rival claims of the author and FREDERICK SCOTT ARCHER (1813-57) to the discovery of the COLLODION PROCESS. The latter (according to D. N. B.) 'in 1850 successfully applied collodion to photography. . . The first account was published in the 'Chemist', March 1851.' Le Gray however in the preface to the above work states that he had already made the discovery in 1849, but attached little importance to it, and recommends it only 'sous le rapport de la finesse et de la rapidité.' P. 89-111 give a description of his collodion process. The announcement of the discovery appeared in the English translation of the author's *Traité pratique de Photographie*, in 1850 (q. v. *infra*).

- 3073 ——— PRACTICAL TREATISE ON PHOTOGRAPHY, on PAPER and GLASS, translated by THOMAS COUSINS, post 8vo. (pp. 24), *sewn* (SCARCE), 10s 6d 1850

In the appendix the author announces his invention of the collodion process, which however had already been discovered and used by Frederick Scott Archer, who unfortunately for himself never thought of taking out a patent, and after a few years died a poor man.

'I have just discovered a process upon glass, by hydrofluoric ether, the fluoride of potassium and soda dissolved in alcohol 40°, mixed with sulphuric ether, and afterwards saturated with collodion', etc. etc.—P. 24.

- 3074 [LEREBOURS (Noël Marie Paymal, *opticien*)] TRAITÉ DE GALVANOPLASTIE, par J. L.; with 11 illustrations, roy. 8vo. *sewn* (scarce), 7s 6d 1843

One of the earliest practical treatises on electrolysis, published only a few years after its invention by Jacobi (v. *Mining and Metallurgy*, post).

At end is a 16-p. Catalogue of Photographic Apparatus, Microscopes, etc. made by the author.

- 3075 ——— TREATISE ON PHOTOGRAPHY; containing the latest Discoveries and Improvements appertaining to the DAGUERRETYPE, translated by J. EGERTON, with folding plate, cr. 8vo. *cl.* (scarce), 12s 6d 1843

Containing chapters on 'Photogenic Papers on the Calotype', by H. FOX TALBOT, F.R.S., 'On a Voltaic Process for Etching Daguerreotype plates', by SIR W. R. GROVE, F.R.S., etc. etc.

v. DAGUERRE, and GAUDIN, ante.

- 3076 LEWES (Vivian Byam, *Prof. Chemistry, Roy. Naval Coll., Greenwich*) ACETYLENE: a Handbook for the Student and Manufacturer, with 228 illustrations, 8vo. (pp. 1004), *cl.* (v. p.), 12s (p. £1. 11s 6d nett) 1900

- 3077 ——— The CARBONISATION OF COAL: a scientific Review of the Formation, Composition, and destructive Distillation of Coal for Gas, Coke, and By-Products, with illustrations, 8vo. *cl.*, 5s (p. 7s 6d nett) 1912

- 3078 ——— LIQUID and GASEOUS FUELS, and the Part they play in modern Power Production, with 54 illustrations, 8vo. *cl.*, 3s 6d (p. 6s nett) 1907

- 3079 LEWKOWITZ (Julius, F.I.C.; *City and Guilds Institute*) CHEMICAL ANALYSIS OF OILS, FATS, WAXES, and of the Commercial Products derived therefrom, founded on BENEDIKT'S second Edition of 'Analyse der Fette'; 2nd Edition, thoroughly revised and enlarged, with illustrations, large 8vo. (pp. 855), *cl.*, 8s 6d (p. £1. 5s nett) 1893

It must be so irritating to the Germans that in spite of the complete militarisation of even the pastoral and pacific udder, Oils, Fats, and Waxes get scarcer and scarcer in the land of hate.

- 3080 LIPPMANN (Edmund O. v., *Direktor, Zuckerraffinerie, Halle*) Die CHEMIE der ZUCKERARTEN, 2. völlig umgearbeitete Auflage von 'Die Zuckerarten und ihre Derivate,' thick 8vo. *hf. German morocco*, 8s (p. M. 17.50) Braunschweig, 1895

- 3081 ——— DRITE (NEUESTE) VÖLLIG UMGEGARBEITETE AUFLAGE, 2 vols. large 8vo. (pp. xxxviii + 2003), *sewn*, £1. (p. M. 30) *ibidem*, 1904

Latest edition of the standard work on the chemistry of Miss Marie Corelli's favourite food.

- 3082 LOBMEYER (L.), Albert ILG, und Wendelin BOEHEIM: Die GLASINDUSTRIE, ihre GESCHICHTE, gegenwärtige ENTWICKLUNG und STATISTIK, 8vo. *hf. roan neat*, 5s Stuttgart, 1874

Pp. 8-144 contain an interesting history of glassmaking to the end of the XVIIth century.

- 3083 LOCK (Charles George Warnford), G. W. WIGGEL, and Robert Henry HARLAND, FF.I.C.: SUGAR GROWING and REFINING: a Comprehensive Treatise on the Culture of Sugar-Yielding Plants, and the Manufacture, Refining, and Analysis of Cane, Beet, Maple, Melon, Milk, Palm, Sorghum, and Starch Sugars, with copious Statistics, and Chapter on the DISTILLATION of RUM, with 10 folding plates and 205 woodcuts, thick 8vo. *cl.* (p. p.), 10s 6d (p. £1. 10s) 8821

- 3084 LUNGE (Georg; *Prof. Technical Chemistry, Zürich*) THEORETICAL and PRACTICAL TREATISE on the MANUFACTURE of SULPHURIC ACID and ALKALI, with the collateral Branches; 3rd Edition, enlarged (Vols. II and III 2nd Edition), with 959 illustrations (including many folding plates), 3 vols. 8vo. in 4, *cl.*, £2. 2s (p. £6. 16s 6d nett) 1903-1896

- 3085 ——— Vol. II: SULPHATE of SODA, HYDROCHLORIC ACID, LEBLANC SODA; 3rd [latest] Edition, much enlarged, with 334 illustrations (including folding plates), 2 thick vols. 8vo. *cl.*, £1. 6s 6d (p. £2. 2s nett) 1909

- 3086 ———, and Ferdinand HURTER: The ALKALI-MAKERS' HANDBOOK: Tables and Analytical Methods for Manufacturers of Sulphuric Acid, Nitric Acid, Soda, Potash, and Ammonia; 2nd Edition, enlarged, with 13 woodcuts, cr. 8vo. *cl.*, 5s (p. 10s 6d) 1891

- 3087 [M. (J.)] The CARDING and SPINNING-MASTER'S ASSISTANT; or the Theory and Practice of Cotton Spinning, showing the Use of each Machine, how to adjust and adapt them, and the different Qualities of Yarn, and how to perform the various Calculations, also an Historical Sketch, with 9 plates (2 folding), 8vo. *cl.* (binding worn); scarce, 10s 6d Glasgow, 1832

- 3088 MATHIEU de DOMBASLE (Christophe Joseph Alexandre) INSTRUCTION THÉORIQUE et PRATIQUE sur la FABRICATION des EAUX-DE-VIE de GRAINS, et de POMMES DE TERRE; with folding plate of distilling plant, 8vo. *sewn* (scarce), 8s 1820

The author rejects the method of treating potatoes with sulphuric acid as a wasteful process.

IX. CHEMICAL TECHNOLOGY, INCLUDING PHOTOGRAPHY, *continued* :—**MACQUEB** (Pierre Joseph ; de l'Académie des Sciences) ART de la TEINTURE en SOIE (1763)—v. PAULET, *post*.**3090 MARTIN** (Adam Georg) VOLLSTÄNDIGE ANLEITUNG zur PHOTOGRAPHIE auf METALL, nebst den neuesten Fortschritten der PHOTOGRAPHIE auf PAPIER, 12mo. *sewn* (scarce), 6s 6d

Wien, 1848

An account of the improved daguerreotype, which not many years afterwards became extinct.

3091 MARTIN (Geoffrey, F.I.C.) INDUSTRIAL and MANUFACTURING CHEMISTRY, Part II: INORGANIC : a Practical Treatise, with numerous illustrations, large roy. 8vo. *cl.*, 17s 6d (p. £1. 5s nett) 1917

Including contributions by E. A. Doncaster, H. D. K. Drew, Sydney J. Johnstone, C. A. Mitchell, F.I.C., F. W. Penny, A. S. Russell, A. B. Searle, James Shelton, F.I.C., and others.

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New York, 1904

3094 MEIBOM (Johann Heinrich ; M.D. ; Lübeck) De CERVISIIS, POTIBUSQUE et EBRIAMINIBUS EXTRA VINUM aliis Commentarius ; accedit ADRIANI TURNEBI LIBELLUS de VINO, sm. 4to. boards (RARE), 15s

Helmstadtii, 1668

A learned treatise, full of quotations from Greek and Latin authors, which was reprinted by Gronovius in his *Thesaurus*. It was unknown to Foggendorf.**3095 MÖHLAU** (Richard, Dresden) ORGANISCHE FARBSTOFFE, welche in der Textilindustrie Verwendung finden. Uebersicht ihrer Zusammensetzung, Gewinnung, Eigenschaften, Reactionen, und ihrer Anwendung zum FÄRBen und BEDRUCKEN von SEIDE, WOLLE und BAUMWOLLE ; with 175 samples of dyed stuffs, roy. 8vo. *hf. morocco*, 8s 6d (p. M. 25) Dresden, 1890**3096 MONTGOMERY** (James) The THEORY and PRACTICE of COTTON SPINNING ; or the CARDING and SPINNING MASTER'S ASSISTANT ; showing the Use of each Machine employed in the Whole Process, how to adjust and adapt them to the various Kinds of Cotton, and the different Qualities of Yarn, and how to perform the various Calculations, with an Historical Sketch of Cotton Spinning ; 3rd Edition, greatly enlarged and improved, with 10 plates (5 folding), 8vo. *cl.*, uncut, 11s 6d

Glasgow, 1836

According to the preface, the first practical treatise on cotton spinning published. See No. 3087, *ante*.**3097 MOORE** (Lt.-Col. E. C. S., R.E.) NOTES on the MANUFACTURE and DISTRIBUTION of COAL GAS, with 29 folding plates and 280 woodcuts, 8vo. *sewn*, 4s (p. 6s 6d nett) Chatham, 1894**3098 MORFIT** (Campbell, M.D., F.C.S., Prof. Applied Chemistry, Univ. Maryland) PRACTICAL TREATISE on the MANUFACTURE of SOAPS, with 16 folding plates (a few coloured), and 35 woodcuts, 8vo. *cl.*, 10s 6d (p. £2. 12s 6d) 1871'An original treatise founded on the studies and labours of the author, in the industrial chemistry of fats. Its object is to reform the empiricism of soap-making, by adjusting the art to the principles of true and modern science.'—*Preface*.**3099 MORITZ** (Edward Ralph, F.I.C.), and George Harris MORRIS, F.I.C. : TEXT-BOOK of the SCIENCE of BREWING, based on a Course of six Lectures delivered by the former at the Finsbury Technical College, with 10 plates and 13 woodcuts, thick 8vo. *cl.* (name scabbled from title) ; SCARCE, £1. 10s 1891

The first English theoretical text-book on brewing, treating the subject as a part of chemical science, and intended as a scientific companion volume to E. R. Southby's 'Practice of Brewing'. The work soon went out of print, and is now scarce.

In this fourth year of the War it may safely be assumed, *pace* the anti-temperance brigade, that the art of brewing and the healthful use of fermented alcoholic liquors will never die out in the land.**3100 —** HANDBUCH der BRAUWISSENSCHAFT, auf Veranlassung der Versuchs- und Lehranstalt für Branerei in Berlin ins Deutsche übertragen von WILHELM WINDISCH ; with 49 woodcuts, 8vo. *cl.*, 7s 6d (p. M. 12) Berlin, 1893**3101 MURDOCK** (William ; inventor of gas-lighting) An ACCOUNT of the APPLICATION of the GAS of COAL to ECONOMICAL PURPOSES, read before the Royal Society, on the 25th February, 1808, 8vo. (pp. 9), *sewn* (rare), 12s 6d [1809]The account of the author's discovery of gas-lighting. 'In February 1808 Murdock read a paper before the Royal Society, in which he gave a full account of his investigations, and also of the saving effected by the adoption of gas lighting at Phillips & Lee's mill. This paper is the earliest practical essay on the subject. The Rumford gold medal, bearing the inscription "ex fumo dare lucem", was awarded to Murdock for this paper, which concludes with these words : "I believe I may, without presuming too much, claim both the first idea of applying and the first actual application of this gas to economical purposes". As to the justice of this claim there can be no doubt.'—*D. N. B.***3102 NASKE** (Carl) Die PORTLAND-CEMENT-FABRIKATION : ein Handbuch für Ingenieure und Cementfabrikanten ; with 3 folding plates, and 183 other illustrations, roy. 8vo. *sewn*, 5s (p. M. 10) Leipzig, 1903**3103 NOBLE** (Sir Andrew, Captain R.A., F.R.S.) ARTILLERY and EXPLOSIVES : Essays and Lectures, with 79 plates (some folding), and many other illustrations, thick 8vo. *cl.*, 14s (p. £1. 1s nett) 1906

A republication in a collected form of the author's important papers and lectures on explosives and gunnery.

3104 —, and Sir Frederick Augustus ABEL, F.R.S. : RESEARCHES on EXPLOSIVES. FIRED GUNPOWDER, with 12 plates, 4to. *sewn* (scarce), 10s 6d 1875**3105 —** ANOTHER COPY, *cl.*, 12s

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IX. CHEMICAL TECHNOLOGY, INCLUDING PHOTOGRAPHY, *continued* :—

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Amstelodami, 1668

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- 3108 ———, **Christopher MERRET**, M.D.; F.R.S., et **Johann KUNCKEL** [v. Löwenstjern]: ART de la VERRERIE, auquel on a ajouté Le Sol sine Veste d'ORSCHALL; L'Helioscopium vivendi sine Veste Solem Chymicum; Le Sol non sine Veste; Le Chapitre XI. du Flora Saturnizans de HENCKEL; sur la Vitrication des Végétaux; un Mémoire sur la Manière de faire le Saffre; Le Secret des vraies Porcelaines de la Chine et de Saxe, traduit de l'Allemand, par M. D*** [le BARON D'HOLBACH]; *with 16 fine copperplates, 4to. old French calf gilt (back rubbed, but a sound and clean copy)*; RARE, £1. 10s
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The author's invention was a combination of the kaleidoscope and the daguerreotype to produce industrial designs mechanically.

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- 3116 ——— [——] LOUIS PASTEUR: his LIFE and LABOURS, by his SON-IN-LAW, translated by LADY CLAUD HAMILTON [with Preface (pp. 32) by JOHN TYNDALL, F.R.S.], cr. 8vo. *cl. (loose in cover)*; *scarce*, 7s 6d
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The thought of Pasteur's invaluable labours in improving the making of good beer and wine must rouse the 'prohibitionists' to the most intemperate fury.

- 3117 **PAULET (M.)** L'ART du FABRIQUANT D'ÉTOFFES de SOIE; *with 202 large copperplates, 7 vols. : MAQUER (Pierre Joseph; de l'Académie des Sciences) ART de la TEINTURE en SOIE; with 6 copperplates—8 vols. roy. folio, contemporary hf. calf (back of one vol. damaged)*; *rare*, £9. 9s 1763-89

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The above copy belonged to Sir THOMAS WARDLE, who has added type-written indexes to each volume.

- 3118 **PHILLIPS (Henry Joshua, F.I.C.)** ENGINEERING CHEMISTRY, comprising Methods of Analysis and Valuation of the principal Materials used in Engineering Work; 3rd [latest] Edition, enlarged, *with 82 illustrations*, thick 8vo. *cl.*, 5s (p. 10s 6d nett)
1902

PHOTOGRAPHIC NEWS—v. No. 170.

—— **NOTES**—v. No. 171.

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Philadelphia, 1866

Written with a view to introduce new methods of paper-making into the United States, where the industry was then passing through a severe crisis from the scarcity of cotton after the Civil War.

IX. CHEMICAL TECHNOLOGY, INCLUDING PHOTOGRAPHY, *continued* :—

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- Intended as a supplement to Knecht, Rawson, and Loewenthal's 'Manual of Dyeing.'
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- 3127 **REIMANN** (M.; editor of the 'Färber-Zeitung') On ANILINE and its DERIVATIVES: a Treatise on the Manufacture of Aniline and Aniline Colours, with APPENDIX: The Report on the Colouring Matters derived from Coal Tar, shown at the French Exhibition, 1867, by A. W. V. HOFMANN, F.R.S., G. DE LAIRE, and CH. GIRARD; the whole revised and edited by [SIR] WILLIAM CROOKES, F.R.S., with 7 woodcuts, 8vo. cl. (cover slightly damaged); scarce, 8s 6d 1868
- The first treatise on aniline dyes, containing much historical information. The 'Report' is not contained in the German edition.
- 3128 **BONDOT** (Natalis) NOTICE du VERT de CHINE, et de la TEINTURE en VERT chez les CHINOIS; suivie d'une Étude des PROPRIÉTÉS CHIMIQUES et TINCTORIALES du LO-KAO, par J. PERSOZ, et de Recherches sur la MATIÈRE COLORANTE des NERPRUNS INDIGÈNES, par A. F. MICHEL; with 2 folding plates, and 4 specimens of dyed silk, roy. 8vo. sewn, with auto. and MS. notes by T. L. PHIPSON (SCARCE), 17s 6d (p. F. 30 nett) 1858
- Important as the first work containing information on the Chinese green dye Lo Kao.
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- ROYAL SOCIETY of ARTS**—v. Nos. 195-7.
- 3129 **RUBBER INDUSTRY** (The): the OFFICIAL REPORT of the FOURTH INTERNATIONAL RUBBER CONGRESS, London, 1914, with the Papers and Discussions, numerous Papers and Discussions on Fibres, Cotton, Oils, etc., the principal Papers read at the Rubber Congress, New York, etc. etc., edited by JOSEPH TORREY and A. STAINES MANDERS, with illustrations, roy. 8vo. cl., 10s 6d (p. 15s 6d nett) [1915]
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IX. CHEMICAL TECHNOLOGY, INCLUDING PHOTOGRAPHY, *continued* :—

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- SOCIETY of CHEMICAL INDUSTRY**—*v. Nos. 33-5.*
- 3140 **STALKER** (John), and George **PARKER**: TREATISE of JAPANING and VARNISHING: a complete Discovery of those Arts, with the best Way of making all sorts of VARNISH for JAPAN, WOOD, PRINTS, or PICTURES, the Method of GUILDING, BURNISHING, and LACKERING, with the Art of GUILDING, SEPARATING, and REFINING METALS, and of PAINTING MEZZO-TINTO PRINTS; also Rules of Counterfeiting Tortoise-Shell, and Marble, and for Staining or Dying Wood, Ivory, and Horn, with above 100 distinct PATTERNS for JAPAN-WORK, in Imitation of the INDIANS, for Tables, Stands, Frames, Cabinets, Boxes, etc., *with 24 large copperplates*, roy. folio, *contemporary calf (some ll. and plates slightly stained, binding worn, and pp. 27 and 28 in MS.)*; *Oxford, apud auctores*, 1688
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- 3143 **TEXTILE COLOURIST** (The): a Monthly Journal of Bleaching, Printing, Dyeing, and Finishing Textile Fabrics, and the Manufacture and Application of Colouring Matters, edited by CHARLES O'NEILL, F.C.S., *with plates and numerous DYED and PRINTED PATTERNS*, COMPLETE in 4 thick vols. 8vo. *cl.*, £1. 12s 6d (p. £4. 4s) *Manchester*, 1876-8
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- 3151 **WRIGHT** (Charles Romley Alder, F.R.S.) ANIMAL and VEGETABLE FIXED OILS, FATS, BUTTERS, and WAXES: their Preparation and Properties, and the MANUFACTURE therefrom of CANDLES, SOAPS, and other Products; 2nd [latest] Edition, edited and partly rewritten by C. AINSWORTH MITCHELL, F.I.C., *with portrait, plate, and 154 other illustrations*, sq. 8vo. (pp. 804), *cl.*, 16s 6d (p. £1. 5s nett) 1903
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- 3153 ——— ANOTHER COPY, *with inscr. to Prof. A. W. Williamson, F.R.S. (as below)*, 12s
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- 3154 **WYER** (Samuel S.) TREATISE on PRODUCER-GAS and GAS-PRODUCERS [with Chronological Bibliography, 1841-1905], *113 illustrations*, 8vo. *cl.*, 10s 6d (p. 17s nett) *New York*, 1906

X. MINING and METALLURGY:

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New York, 1889.

The author made important researches on the part played by dangerous dusts in bringing about explosions, and bore an even more patriotic part in examining at the risk of his life the various bombs used by Irish dynamiters in the 'Eighties.

3157 **AGRICOLA** [vere **BAUER**] (**Georgius, Kempnicensis, medicus**) De RE METALLICA Libri XII, quibus OFFICIA, INSTRUMENTA, MACHINÆ, ac omnia denique ad Metallum spectantia, non modò luculentissimè describuntur, sed et per Effigies, suis Locis insertas, adjunctis Latinis, Germanicisque Appellationibus, ita ob Oculos ponuntur, ut clariùs tradi non possint; ejusdem de ANIMANTIBUS SUBTERRANEIS Liber; De ORTU et CAUSIS SUBTERRANEORUM Lib. V. De NATURA eorum quæ EFFLUUNT ex TERRA Lib. IV. De NATURA FOSSILIIUM Lib. X. De VETERIBUS et NOVIS METALLIS Lib. II. **BERMANNUS**, sive de RE METALLICA Dialogus Lib. I. [INTERPRETATIO GERMANICA VOCUM REI METALLICÆ], cum INDICIBUS diversis, quicquid in Opere tractatum est, pulchrè demonstrantibus; with very numerous large and well-executed woodcuts, folio, *old pressed vellum, neatly rebacked (one blank l. missing, and slightly foxed as usual, otherwise a FINE AND UNUSUALLY TALL COPY)*; RARE, £5. 5s
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This work is of great importance as the first comprehensive one on mining and metallurgy, while the numerous excellent woodcuts give the first exhaustive pictorial account of the machinery and processes then in vogue.

It remained for a long time the most important textbook of mineralogy. It is characterised by a clearness of expression, a temperate conception of the operations described, and a distinct description both of the apparatus employed and the processes followed—qualities which stamp Agricola as a true investigator. It was through this work that the more important operations in the working up of ores for their metals first became generally known; and Agricola was likewise the first to explain intelligibly the manufacture of other products obtained by smelting, and of various preparations of technical importance.—Prof. E. v. Meyer.

The author was the first to give a full account of the chemistry of metals. He also discovered bismuth, and in mineralogy distinguished between simple and compound minerals, the first of which he divided into earthen, concretions, stones, and metals. In 'De Re Metallica' the author states that mineral substances may be recognised by the colouring of a flame on burning them—the first suggestion of blowpipe analysis.

AMERICAN INSTITUTE of MINING ENGINEERS: TRANSACTIONS—v. No. 148.

- 3158 **ANDRÉ** (George Guillaume, A.M.I.C.E., F.G.S.) DESCRIPTIVE TREATISE on MINING MACHINERY, TOOLS, and other Appliances, with 182 plates, 2 vols. roy. 4to. *cl.* (o. p.), £1. 10s (p. £3. 12s)
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New York, 1909

- 3163 **AURELI** (Aurelio) LA PRATICA della FONDERIA: Tratto sulla PRODUZIONE dei GETTI in GHISA, illustrato da numerosi e particolareggiati Esempi, Norme e Dati riguardanti l'Impianto di Fonderie; with 528 woodcuts, thick 8vo. *sewn*, 8s (p. L. 20 nett)
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- 3164 **BALLING** (Carl A. M., Prof. Mining and Metallurgy, *Präbrom*) DIE METALLHÜTTENKUNDE: Gewinnung der Metalle und Darstellung ihrer Verbindungen auf den Hüttenwerken; with 371 illustrations, 8vo. *hf. German morocco*, 9s (p. M. 16 *sewn*)
Berlin, 1885

- 3165 **BARBA** (Alvarez Alonzo): COLLECTION of RARE and VALUABLE TREATISES, on METALS, MINES, and MINERALS. Parts I and II containing the ART of METALS, written originally in Spanish, by ALBARO ALONSO BARBA, translated by the EARL of SANDWICH, in 1669: Part III containing the Invaluable Piece of G. PLATTES, viz. a DISCOVERY of all Sorts of MINES from Gold to Coal. Part IV. HOUGHTON'S COMPLEAT MINER, first edition, 12mo. *sound copy in contemporary calf* (RARE), £1. 1s
1738

Each of the three treatises has a separate title-page in this edition.

- 3166 ——— SECOND EDITION, with frontispiece, 12mo. *old calf (joints cracked)*, 15s
1740

- 3167 ——— ANOTHER COPY, *old calf, neatly rebacked (frontispiece missing)*, 12s 6d

Barba's work is valuable for containing a full account of the ancient method of amalgamating ores rich in native silver in Peru. It also includes (according to John Percy) an excellent account of the Kongsberg silver-smelting process, founded on the author's observations in Bolivia, and of the Cazo or Caldron Process. Houghton's work is of importance for giving the mining laws, and an explanation of miners' terms.

- 3168 **BORCHERS** (Wilhelm, Prof. Metallurgy, Aachen) ELECTRIC FURNACES: the Production of Heat from Electrical Energy, and the Construction of Electric Furnaces, translated by HENRY G. SOLOMON, with folding plate and 278 text-illustrations, 8vo. *cl.*, 5s (p. 7s 6d nett)
1908

Had there been no electric furnace there would have been little aluminium: had there been no aluminium there would have been no Zeppelins: and had there been no Zeppelins German immoralism might never have rushed on its great adventure. Queritur an Scientia Applicata hominibus bono sit.

- 3169 **BREARLEY** (Harry) THE HEAT TREATMENT OF TOOL STEEL: an illustrated Description of the Physical Changes and Properties induced in Tool Steel by Heating and Cooling Operations, with 73 illustrations, 8vo. *cl.*, 7s (p. 10s 6d nett)
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X. MINING AND METALLURGY, continued:—

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- 3172 ——— **CHEMICAL PHENOMENA OF IRON SMELTING**: an Experimental and Practical Examination of the Circumstances which determine the Capacity of the Blast Furnace, the Temperature of the Air, and the proper Condition of the Materials to be operated upon, with 3 folding diagrams, 8vo. cl. (SCARCE), £2. 2s 1872
- The outcome of his experimental researches on blast furnace practice, in which he was assisted by Dr. C. R. A. Wright, was his classical 'Chemical Phenomena of Iron Smelting', which was translated into French, German, and Swedish. In his research on the blast furnace he had taken full advantage of contemporary research and invention, and advanced beyond them. He amplified and completed the work of Bunsen and Playfair by establishing a true basis for estimating the 'heat balance' of the furnace, and by determining once and for all the main sequence of the chemical changes as the descending charge of ore, fuel, and flux met the ascending furnace gases', etc. etc.—*Prof. W. A. Bone, F.R.S.*
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- According to Dr. Percy, it contains the earliest and fullest account of the cementation process with chloride of sodium for separating gold from silver and baser metals.
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X. MINING AND METALLURGY, *continued*.—

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Vienne, 1788
 Containing the author's discovery of a new process of amalgamation, here first described, and of improved methods in several departments of mining.
 According to Quérand copies of the above work were also issued without the illustrations. An inferior edition was published in 1787 in Berne.

TRANSLATED BY DOUSTERSWIVEL :

- 3191 ——— NEW PROCESS of AMALGAMATION of GOLD and SILVER ORES, and other Metallic Mixtures, as introduced in Hungary and Bohemia, translated by RUDOLF ERIC RASPE, with SUPPLEMENT, or comparative View of the former Method of Melting and Refining, and Account of its LATEST IMPROVEMENTS, and of the QUICKSILVER TRADE, with 22 copperplates (many folding) of metallurgical plant, 4to. original boards, uncut (wanting Plate xx) ; RARE, 16s 1791
- 3192 ——— ANOTHER COPY, original boards, uncut, with translator's inser. to RICHARD WATSON, F.R.S., *absentee Bp. of Llandaff, and his Calgarth Park booklabel*, £1. 15s
 'For the Right Reverend Lord Bishop of Landaff with respectfull thanks for the honour of His Subscription, from His Lordship's most ob. h. Servt R. E. RASPE.'—*Inscr. on flyleaf*.
 The translation of the foregoing work, with an appendix not contained in the original. It is of special interest on account of its translator, a German professor at Cassel, who fled to England to avoid punishment for theft. He was elected a Fellow of the Royal Society, but struck off the rolls on his antecedents becoming known. He was the author of the original 'Baron Münchhausen', and a swindler of a most interesting type. 'In the autumn of 1791 Raspe went on a tour in the extreme North of Scotland, where he professed to discover signs of vast mineral wealth. To sustain his reputation as a mineralogist, he brought out, in 1791, a translation of Baron Born's new process of amalgamation. By plausible manoeuvres he inveigled a local magnate, Sir John Sinclair of Ulster, into disbursing large sums for preliminary operations. When the time came for a fruition of his schemes, Raspe disappeared. The incident was crystallised in a tradition which Sir Walter Scott utilised in *The Antiquary* (where Raspe figures in the character of *Dousterswivel*).—D. N. B.
- 3193 **BURAT** (Amédée) COURS d'EXPLOITATION des MINES, large 8vo. : ATLAS, with 88 fine plates (chiefly folding), roy. 4to.—2 vols. hf. French green morocco gilt (nice copy), 15s (p. F. 50 nett sewn) 1871
- 3194 ——— GÉOLOGIE APPLIQUÉE: TRAITÉ du GISEMENT et de la RECHERCHE des MINÉRAUX UTILES, 5^e [dernière] Édition, augmentée; with 33 plates (some folding), and numerous woodcuts, 2 vols. 8vo. hf. maroon roan (nice copy) ; SCARCE, £1. 5s 1870
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- 3197 **CALLON** (Pierre Jules, Inspector General of Mines) LECTURES on MINING, translated by SIR C. LE NEVE FOSTER, F.R.S., and W. GALLOWAY, 3 vols. roy. 8vo. cl., uncut, with Atlases, containing 119 folding plates, 3 vols. 4to. hf. cl.—6 vols., £1. 5s (p. £3. 15s nett) Paris, 1876-86
- 3198 **CAMPBELL** (Henry Huse, Pennsylvania Steel Co.) The MANUFACTURE and PROPERTIES of IRON and STEEL; 2nd [recte 3rd] Edition, revised; with numerous full-page and other illustrations, 8vo. (pp. 891), cl., 10s 6d (p. £1. 1s nett) New York, 1904
- 3199 **CESI** [ò CESIO; Latine CÆSIUS] (Bernardo, S.J.) MINERALOGIA, sive Naturalis Philosophiæ Thesauri, in quibus Metallicæ Concretionis Medicamentorumque Fossilium Miracula, Terrarum Pretium, Colorum et Pigmentorum Apparatus, Concretorum Succorum Virtus, Lapidum atque Gemmarum Dignitas continentur, thick folio, old vellum, or, parchment (RARE), £2. 2s
Lugduni, J. et P. Prost, 1636
 Containing also much of chemical interest. Pp. 1-187 treat of Mineralogy proper, pp. 187-283 of Colours and Pigments, and pp. 541-608 of Gems. The work is not noticed by Brunet and is rare.
- 3200 **COLE** (Grenville Arthur James, M.R.I.A.) AIDS to PRACTICAL GEOLOGY; 6th [latest] Edition, revised, with 3 plates (one coloured), and 136 text-illustrations, large cr. 8vo. cl., 6s 6d (p. 10s 6d) 1909
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 Long a standard work on its subject, and still of value, consisting of a collection of the author's more important contributions in the *Annales des Mines*. The author was the first to propound a correct theory of centrifugal ventilation, and invented the wing anemometer in use in mines.
- 3204 **CONGRÈS INTERNATIONAL des MINES, de la MÉTALLURGIE, de la MÉCANIQUE et de la GÉOLOGIE APPLIQUÉES**; with numerous illustrations, 4 vols. roy. 8vo. sewn, 7s 6d
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Sheffield, printed for the Author, 1797

This interesting work gives the FIRST PRINTED ACCOUNT of AN IRON RAILWAY, pp. 23-9 treating of 'Cast Iron Railways', while one plate illustrates the iron plates, sleepers, and points, and another the carriage used on them, with details of construction.

'The making and use of rail-roads and corves were the first of my inventions, and were introduced at the Sheffield Colliery about 21 years ago; they are doubtless a great acquisition in rendering the article of conveyance much easier and less expensive, and it is not the least convincing proof of their being so, that they have been generally imitated and made use of in most collieries for the last three years, especially in the southern parts of the kingdom.'—*Preface*.

It may be interesting to mention that Benjamin Outram is generally credited as having first introduced iron railways at the Butterley Ironworks in 1793, or 17 years after the invention alleged to have been made by John Curr, who appears to be generally unknown, and is not included in *D. N. B.*

- 3212 CUSHMAN (Allerton Seward; *Director, Inst. Industrial Research, Washington*), and Henry Alfred GARDNER: The CORROSION and PRESERVATION of IRON and STEEL, with 68 illustrations, large 8vo. cl., 11s (p. 17s nett) New York, 1910

pp. 301-68 contain a valuable annotated BIBLIOGRAPHY.

- 3213 DAUBRÉE (Gabriel Auguste, *de l'Institut; F.R.S.*) ÉTUDES SYNTHÉTIQUES de GÉOLOGIE EXPERIMENTALE, 1^{re} Partie: Application de la Méthode expérimentale à l'Étude de divers Phénomènes géologiques et cosmologiques; with 4 plates and 77 woodcuts, roy. 8vo. sewn, 10s 1879

A standard work, containing the results of the author's pressure-experiments to elucidate the formation of strata and minerals.

THE DAVY LAMP:

- 3214 DAVY (Sir Humphry, F.R.S.) On the FIRE-DAMP of COAL MINES, from the Philosophical Transactions of the Royal Society, with an ADVERTISEMENT, containing an Account of an INVENTION for lighting the Mines and consuming the Fire-Damp without DANGER to the MINER, with folding plate of an elementary form of the Safety Lamp, sm. 8vo. (pp. xvi + 39), sewn (SCARCE), £1. 1s
W. Bulmer and Co., 1816

This is the earliest account of the invention of the Davy Lamp. It is still in the most rudimentary form—a glass chimney with a wire-gauze screen fitted on top. It is perhaps a sign of Sir Humphry's aristocratic affinities that this scientific tract was printed at the modish press in Cleveland Row.

- 3215 ——— On the SAFETY LAMP for COAL MINERS; with some RESEARCHES on FLAME, first edition, with folding copperplate, 8vo. (pp. viii + 149), original boards, uncut (SCARCE), £1. 5s R. Hunter, 1818

The account of the Davy Lamp, Sir Humphry's best known invention, illustrating the lamp in its perfected form, i.e., having a chimney of wire-gauze. In the preface he acknowledges his indebtedness to Faraday 'for much able assistance in the prosecution of my experiments.' It is typical of the time that the first use of the Davy Lamp, which the inventor would not patent, was to work still deeper and more fiery seams, so that the atrocious tale of colliery explosions went up instead of down (*Mr. and Mrs. Hammond's 'Town Labourer'*).

- 3216 ——— [SECOND EDITION, entitled:] On the SAFETY LAMP for preventing EXPLOSIONS in MINES, Houses lighted by Gas, Spirit Warehouses, or Magazines in Ships, etc., with some RESEARCHES on FLAME, with folding copperplate, 8vo. (pp. viii + 153), original boards, uncut (SCARCE), £1. 1s
apud eundem, 1825

The final edition, to which are added 'additional paragraphs, containing some new facts and some practical results connected with the Safety Lamp; most of the last occurred to me during journeys that I have made, for the purpose of introducing this invention into the principal mines of Europe, in which inflammable air is found.'—*Advertisement*.

- 3217 DEMUTH (Theobald) MECHANISCHE TECHNOLOGIE der METALLE und des HOLZES; with 9 folding plates, and 488 woodcuts, 8vo. cl., 5s (p. K. 8.40) Wien, 1907

- 3218 DESCH (Cecil H., *Univ. Glasgow*) METALLOGRAPHY, with 14 plates and 108 text-illustrations, thick post 8vo. cl., 6s (p. 9s nett) 1910

'Presenting the methods employed, the conclusions which have been reached, and indicating the directions in which further research is needed.'—*Preface*.

- 3219 DRINKER (Henry S.) TUNNELING, EXPLOSIVE COMPOUNDS, and ROCK DRILLS, giving the Details of practical Tunnel Work, the Constituents and Properties of Modern Explosive Compounds, the Principles of Blasting, the History of the Rise of Machine Rock-Drilling, a Description of the various Rock Drills and Air-Compressors, the European and American Systems of Timbering and Arching, Tables, and a History of Tunneling from Rameses II., with folding plates and over 1000 woodcuts, thick roy. 4to. (pp. 1075), original hf. morocco (sound copy); o.p., £1. 1s (p. £6. 6s) New York, 1878

'The author has endeavoured to systematically arrange the data collected, most of them from hitherto unpublished sources, and to give the gist of the opinions expressed by the best European writers.'—*Preface*.

X. MINING AND METALLURGY, *continued* :—

- 3221 **DITTE** (Alfred) LEÇONS sur les MÉTAUX, professées à la Faculté des Sciences de Paris; with woodcuts, 2 vols. cr. 4to. *hf. cl.*, 10s 6d (p. F. 30 nett sewn) 1891
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Dud Dudley was the first to make a successful attempt to extract iron from its ores by means of mineral coal, it having till then been produced by the far more expensive charcoal, largely in the Weald of Sussex; and thus immensely lessening the cost.
Although Sturtevant's and Rovenston's methods proved failures, their works are nevertheless important as having stimulated Dud Dudley in his own discovery.
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- 3227 **FLOWER** (Philip William) HISTORY OF THE TRADE IN TIN; a short Description of Tin Mining and Metallurgy; a History of the Origin of the Tin-Plate Trade; and a Description of the ancient and modern Processes of Manufacturing Tin-Plates, with portrait of Major John Hanbury, father of the English tin-plate trade, 9 plates, and map, 8vo. *cl.* (scarce), 10s 6d 1880
- 3228 **FORSTER** (Westgarth) TREATISE ON A SECTION OF THE STRATA FROM NEWCASTLE-ON-TYNE to the Mountain of CROSS FELL, Cumberland, with REMARKS ON MINERAL VEINS in General, and Treatise on the Discovery, Opening, and Working of LEAD MINES, with the Dressing and Smelting of Lead Ores; 2nd Edition, greatly enlarged, with folding plates (a few coloured), and table, 8vo. boards, uncut (SCARCE), 12s 6d Alston, 1821
- One of the earliest works on lead mining.
- 3229 **FOSTER** (Sir Clement Le Neve, F.R.S., Prof. Mining, Royal Coll. of Science) TEXT-BOOK OF ORE AND STONE MINING; 5th Edition [slightly revised], with frontispiece, and 715 woodcuts, thick 8vo. (pp. 763) in 2 vols. *cl.*, 12s (p. £1. 14s) 1904
- 3230 ——— SEVENTH [LATEST] EDITION, revised by S. HERBERT COX, with frontispiece and 712 text-illustrations, thick 8vo. (pp. 829), *cl.*, £1. (p. £1. 8s nett) 1910
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—v. GREGORY (David), PHYSICS, *ante*.
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The above journal continued *La Lumière Électrique* (v. No. 123), which was discontinued in 1894. The title was afterwards changed into *La Lumière Électrique*, précédemment *L'Eclairage Électrique*. It is in its turn continued by *Revue Générale de l'Électricité* (q. v. post).

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— **NEWS (The)**—v. No. 61.

— **REVIEW (The)**—v. No. 62.

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ELECTRICIAN (The)—v. Nos. 66, 68, and ADDENDA, post.

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Nicholas Hawksmoor was the 'scholar' and greatest pupil of Wren, and helped in building St. Paul's. He did much work at Queen's and All Souls Colleges at Oxford, but his most interesting works to Londoners are St. Mary Woolnoth in Lombard St. and his many East End churches under Queen Anne's 'Fifty' scheme, which include St. Anne's, Limehouse, St. George's in the East, and that noble church, Christ Church, Spitalfields.

The above volume is specially interesting for having belonged to JOHN RENNIE, who afterwards actually built New London Bridge, still the noblest bridge in England. The works added by him are: Memorial concerning Hexham Bridge, by JOHN SMEATON, F.R.S., with a brief Reply by a Freeholder (1782): A Copy of Mr. Myles Opinion and Report to the Magistrates of Northumberland respecting the Practicability of building a permanent bridge at Hexham: Copy of a Letter to Mr. L. Becker, Director and First Secretary of the Batavian Society for Experimental Philosophy at Rotterdam: Treatise on Rivers and Canals, by THEODORE AUGUSTUS MANN.

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The Manuscript was probably written on or immediately after leaving Edinburgh University, when he established a business on his own account as a millwright.

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A very interesting Manuscript, which must have formed the basis of Sir John Rennie's presidential address to the Institution of Civil Engineers on the history of Civil Engineering in 1846. Some of the volumes bear extensive alterations and corrections, the work having evidently been designed for publication. This is borne out by a passage in the author's *Autobiography* (p. 456): 'I also design to write a history of engineering, enlarged from my address to the Institution of Civil Engineers, and a life of my revered father. All these I have already sketched out, and I hope to complete them, if it please God to spare my life a few years longer.' None of these works was carried out, although the author's wish was granted.

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- 3705 **ZAHKJANZ** (Gabriel) *DIE THEORIE, BERECHNUNG und KONSTRUKTION der DAMPFURBINEN; with 23 illustrations, roy. 8vo. sewn, 3s 6d (p. M. 6)* Berlin, 1906

ZEITSCHRIFT für ANGEWANDTE ELEKTRIZITÄTSLEHRE—v. No. 214.

- 3706 **ZEUNER** (Gustav Anton; *Polytechnikum, Zürich*) *GRUNDZÜGE der MECHANISCHEN WÄRMETHEORIE, mit Anwendungen auf die der Wärmelehre angehörigen Theile der Maschinenlehre, insbesondere auf die THEORIE der calorischen Maschinen und DAMPFMASCHINEN, 2. [neueste Auflage]; with 56 woodcuts, 8vo. hf. black calf neat, cl. sides, 5s (p. M. 13 sewn)*

Leipzig, 1877

- 3707 **ZONCA** (Vittorio, *architetto di Padova*) *NOVO TEATRO MACHINE et EDIFICII per VARIE et SECURE OPERATIONS, cò le loro Figure tagliate in Rame e la Dichiaratione e Dimostrazione di ciascuna, nuova Edizione; with engraved title and 44 large and fine etchings (good impressions), folio, cl. (some ll. mended, but a sound copy); RARE, £1. 5s* Padova, F. Bertelli, 1621

- 3708 — **ALTRA EDIZIONE; with engraved title, and FINE IMPRESSIONS of the 44 large and fine etchings, folio. old Italian vellum (FINE COPY), £1. 15s ib., a. e., 1656**

A very rare work on machinery, displaying the wonderful inventions of the author, including those for various mills, copperplate and printing presses, a smoke-jack for roasting, etc. Among the rest is a spinning-jenny, identical with the one patented over a century later in England, the honour of inventing which certainly belongs to the ingenious Italian, whose countrymen seem to have given themselves little trouble to claim justice for Zonca.—*Libri Catalogue*. The last machine illustrated represents a monster siphon for perpetual motion, which is described in Dircks's 'Perpetuum Mobile', 2nd series. 'Ce recueil peut être consulté avec fruit par ceux qui voudraient imiter actuellement quelques produits des manufactures de l'époque où vivait l'auteur.'—*G. Libri*.

- 3709 **ZYL** (Johannes van) *THEATRUM MACHINARUM UNIVERSALE, of groot algemeene MOOLENBOEK, behelzende de Beschryving en Afbeeldingen van allerhande Soorten van Moelen, derzelver Opstellen en Gronden . . . nevens eene naauwkeurige Afbeelding van de AMSTERDAMSCHER MODDER-MOOLENS, enz.; with vignette and 62 fine folding plates on copper by Jan Schenk, impl. folio, boards (clean and tall copy); RARE, £1. 5s* Amsterdam, 1761

The most sumptuous work ever published on Windmills, which were brought to perfection by stress of circumstances in Holland.

XII. SEAMANSHIP and AIRMANSHIP;

NAVAL ARCHITECTURE and ENGINEERING:

- 3710 **BACON** (John Mackenzie, *pr.*), *The RECORD of an AERONAUT, being the LIFE of, by his Daughter GERTRUDE, with photogravure portrait and 62 illustrations on 40 plates, 8vo. cl., 7s 6d (p. 16s nett)* 1907

Valuable for the numerous photographs taken from a balloon.

- 3711 **BERTHOUD** (Ferdinand, *de l'Institut; F.R.S.*) *TRAITÉ des HORLOGES MARINES, contenant la Théorie, la Construction, la Main-d'Œuvre de ces Machines, et la Manière de les éprouver, pour parvenir, par leur Moyen, à la Rectification des Cartes Marines, et de la Détermination des Longitudes en Mer; with 27 fine folding plates by Choffard, 4to. sound copy in contemporary hf. vellum, uncut (RARE), £1. 1s* 1773

- 3712 — **ANOTHER COPY, hf. calf neat, £1.**

Berthoud construisit les premières horloges marines . . . MM. de Fleurac et Borda, qui essayèrent les premiers les horloges marines de ce mécanicien, constatèrent qu'après une traversée de six semaines, elles marquaient la longitude en mer à un quart de degré ou cinq lieues au plus sans que l'explosion de l'artillerie troublât la régularité de leurs mouvements.—*Biogr. Gén.*

It has been claimed that Berthoud was the first to apply compensation to the balance of the watch—the final step in the production of the chronometer—an invention generally ascribed to Harrison. He undoubtedly made the first pocket watch with compensation curb, and moreover invented an escapement in which the balance makes two vibrations in the time that one tooth only of the wheel escapes.

- 3713 — **VOYAGE fait par Ordre du Roi en 1768 et 1769, à différentes Parties du Monde pour ÉPROUVER en MER les HORLOGES MARINES inventées par F. B., par D'EVEUX DE FLEURIEU; with 5 folding plates and maps, and 4 tables, 2 vols. 4to. contemporary hf. calf gilt, 10s**

Imprimerie Royale, 1773

XII. SEAMANSHIP AND AIRMANSHIP; NAVAL ARCHITECTURE AND ENGINEERING, *continued* :—

- 3715 **BALL** (Frederick, *Chaplain and Naval Instructor, R.N.*) ALTITUDE TABLES, computed for Intervals of 4' between the Parallels of Latitude 31° and 60°, and Parallels of Declination 0° and 24°, for the Determination of the Position Line at all Hour Angles, without Logarithmic Computation, impl. 8vo. cl., 10s (p. 15s nett) 1907

BEAUFOY (Col. Mark, F.R.S.) NAUTICAL and HYDRAULIC EXPERIMENTS (1834) — v. METEOROLOGY, *ante*.

- 3716 **BLUNDEVILLE** (Thomas): M. BLUNDEVILLE HIS EXERCISES, containing sixe Treatises, the Titles whereof are set down in the next printed Page; which Treatises are verie necessarie to be read and learned of all yong Gentlemen that haue not bene exercised in such Disciplines, and yet are desirous to haue Knowledge as well in COSMOGRAPHIE, ASTRONOMIE, and GEOGRAPHIE, as also in the Arte of NAVIGATION, in which Arte it is impossible to profite without the Helpe of these, or such like Instructions, first edition, black letter; with folding plate, and numerous woodcuts (2 with volvelles), thick sm. 4to. contemporary limp vellum (some ll. slightly wormed, and others slightly torn or worn, but on the whole a sound copy, with contemporary MS. notes on margins); very rare, £10. 10s

John Windet, dwelling at the signe of the crosse Keies, neere Pauls wharffe, 1594
This first edition, which is especially rare, consists of six treatises, each with a separate title, viz., Of Arithmetike (Including 'Astronomical Fractions,' and the 'Use of the Sexagenarie Table'); Tables of Sines, Tangents, and Secants; Treatise of the Sphere; the Use of the Globe, with 'Description and Use of Plancius his Mappe'; Description and Use of Blagrove's Astrolabe (Mathematical Jewell); and Treatise of Navigation.

- 3717 — SECOND EDITION, corrected and augmented, containing EIGHT TREATISES, black letter; with numerous woodcuts and diagrams, 2 folding plates, and large folding 'Sexagenarie Table,' thick sm. 4to. old calf, newly rebounded (slightly stained, and rev. of title written on in an old hand, otherwise a very sound copy, with all the separate titles); VERY RARE, £8. 15s *apud eundem*, 1597

This edition first contains (with a separate title): 'A Briefe Description of vniuersall Maps and Cards, and of their vse, and also the vse of Ptolomey his Tables, together with the true order of making the saide Tables, and of all other Mappes and Cardes as well vniuersall as particular, and that according to the doctrine of the best Geographers that be or haue bene in these latter daies.'

- 3718 — SIXTH EDITION, corrected and augmented, black letter, with numerous woodcuts (some with movable slips), and folding plates and tables, sm. 4to. original rough calf (back of binding damaged, otherwise AN UNUSUALLY FINE AND LARGE COPY), £5. 5s

Printed by William Stansby, and are to be sold by Richard Meighen, at his shop vnder Saint Clements Church without Temple Barre, 1622

- 3719 — SEVENTH [AND LAST] EDITION, corrected and somewhat enlarged by RO. HARTWELL Philomathematicus, black letter; with numerous woodcuts (some with movable slips), and folding plates and tables, sm. 4to. old calf (title soiled, and some ll. inked or scribbled on in an old hand), £2. 2s

Printed by Richard Bishop, and are to be sold by Benjamin Allen, at the signe of the Flowerdeluce in Popes-head Alley, 1636

'He was the first introducer [in the above work] of a complete trigonometrical canon into English, the first announcer of Wright's discovery of meridional parts, and exercised much influence on the studies of the first part of the XVIIth Century. Nor is he altogether out of date yet; for I lately observed (*Mechanic's Magazine*, v. XLIV, p. 477) that a patent for an improvement in horse-shoes was upset in the Court of Chancery, on proof that Blundeville had described it in one of his works. The first of these exercises is a treatise on arithmetic, in the form of question and answer, written for Elizabeth Bacon, the sister of the great philosopher. It is a dogmatical treatise, sufficiently clear.'—*Prof. de Morgan*.

- 3720 **BONNEFOUX** (— Baron de, *Capitaine de Vaisseau*), et Vice-Amiral François Edmond PARIS, de l'Institut: DICTIONNAIRE de MARINE à VOILES et à VAPEUR; with 17 folding plates, 2 thick vols. impl. 8vo. calf gilt (2 joints cracked), 15s [1848]

'Ouvrage qui n'a pas d'analogue, même en Angleterre.'—*Biogr. Gén.*

- 3721 **BOUGUER** (Jean, *Professeur Royal d'Hydrographie*) TRAITÉ COMPLET de la NAVIGATION, [2^e Édition], nouvellement revüe, corrigée et augmentée par l'Auteur de plusieurs Manieres de Naviguer par de nouvelles Echelles, avec des Remarques sur les Erreurs qu'on a commises jusqu'à present dans les Regles composées de longues Routes fausses cournées par Estimes, et les Moyens de les corriger, par une quatrième nouvelle Correction; with folding plates, 4to. fine copy in contemporary mottled calf (RARE), £1. 1s 1706

- 3722 **BOUGUER** (Pierre, de l'Académie Royale) De la MANŒUVRE des VAISSEAUX, ou TRAITÉ de MÉCANIQUE et de DYNAMIQUE, dans lequel on réluit à des Solutions très-simples des Problèmes de Marine les plus difficiles, qui ont pour Objet le Mouvement du Navire; with 15 folding plates, 4to. contemporary calf (RARE), £1. 1s 1757

'Le premier livre est un excellent traité de mécanique et de dynamique, ainsi que d'hydrostatique et d'hydrodynamique, où l'auteur établit les principes de ces deux sciences.'—*Montucla's Histoire des Mathématiques*, where a full account of the work will be found in v. IV, pp. 428-5. The third Book solves important sailing problems by geometrical means.

- 3723 — NOUVEAU TRAITÉ de NAVIGATION, contenant la Théorie et la Pratique du PILOTAGE; with 13 folding plates, 4to. contemporary calf, 15s 1753

No copies of either of the above works were in the Scott Library.

- 3724 — TRAITÉ du NAVIRE, de sa CONSTRUCTION, et de ses MOUVEMENTS, première édition; with 12 folding plates, 4to. cl. with auto. of Dr. Francis Elgar, F.R.S., and bookstamp of Gen. J. Drinkwater Bethune (historian of the Siege of Gibraltar), 17s 6d 1746

This important work is generally considered to have laid the foundation of the theory of naval architecture.

- 3725 **BOURNE** (John, C.E.) TREATISE on the SCREW PROPELLER, with various Suggestions of Improvement; 2nd Edition, revised, with 20 folding plates, and 206 woodcuts, 4to. cl., 6s 6d 1855

The first 85 pages contain a valuable historical account.

- 3726 **BUCHANAN** (Robertson, C.E.) PRACTICAL TREATISE on PROPELLING VESSELS by STEAM, etc., with 16 copperplates, 8vo. hf. calf (RARE), £1. 1s Glasgow, 1816

Interesting as the first treatise on steamboats, and for containing copious descriptions of early steam vessels and contemporary inventions and improvements in connexion with them,

A COMPLETE SET TO 1916:

3727 **BRASSEY** (Thomas Earl) **THE NAVAL ANNUAL**, complete from its Beginning in 1886 to 1916 [with copious INDEXES], many hundreds of plates (*tinted and plain*), woodcuts, charts, etc., 30 vols. roy. 8vo. cl. (FRESH SET); SCARCE, £10. 10s (p. £19. nett), Portsmouth, 1886-1916

3728 ——— A SERIES from 1886-95, '97, and 1902-3, 12 vols. roy. 8vo. cl., £2. 10s
ibidem, 1886-1903

This invaluable work of naval reference comprises a vast amount of information on every naval subject, including much on naval architecture and engineering, culled from the most various sources both British and Foreign, hitherto hardly accessible, and presented here in an easily digestible form. The earlier volumes are very scarce.

3729 **CHAPMAN** (Fredrich Henrik af; *Swedish Admiral*) **TRAITÉ de la CONSTRUCTION des VAISSEAUX**, avec Ecclaircissements et Démonstrations concernant l'*Architectura Navalis Mercatoria*, traduit avec Notes et Additions, par VIAL DU CLAIRBOIS; with 20 folding plates, 4to. contemporary French mottled calf extra (FINE COPY); RARE, £1. 10s Brest, 1781

'Cette traduction est plus estimée que celle par Lemonnier.'—*Quérard*. There was no copy in the Scott Library. The author was the first to elaborate a complete theory of shipbuilding, and to give rules for finding the centre of gravity and the carrying power of ships.

CHAPMAN (William, M.I.C.E.) **OBSERVATIONS on the VARIOUS SYSTEMS of CANAL NAVIGATION** (1797)—v. FULTON, No. 3449.

3730 **CONGREVE** (Col. Sir William, R.A.; M.P.; F.R.S.) **THE DETAILS of the ROCKET SYSTEM**, shewing the various Applications of this Weapon, both for Sea and Land Service, and its different Uses in the Field and in Sieges, illustrated by Plates of the principal Equipments, Exercises, and Cases of actual Service, with general Instructions for its Application, and a Demonstration of the comparative Economy of the System, with 13 fine aquatint plates, oblong folio, hf. morocco gilt (binding rubbed, but a SOUND and CLEAN COPY); VERY SCARCE, £3. 3s 1814

Containing the invention of the Congreve Rocket. The above work is very scarce, and was unknown to the author's biographer in D. N. B.

3731 ——— **TREATISE on the GENERAL PRINCIPLES, POWERS, and FACILITY of APPLICATION of the CONGREVE ROCKET SYSTEM**, as compared with Artillery, showing the various Applications of this Weapon, both for Sea and Land Service, with a Demonstration of the comparative Economy of the System, with 12 folding plates, 4to. calf (binding damaged, and some plates and ll. wormed); VERY SCARCE, £1. 1s 1827

'After many experiments he succeeded in inventing the celebrated Congreve rocket in 1808. The war office and board of ordnance determined to make use of this invention for military purposes, and highly applauded its inventor. The first trial of its efficacy was made at sea, in Lord Cochrane's attempt to burn the French fleet in the Basque roads in 1809. In 1818 he was ordered with one of his rocket companies to the continent, and served at the battle of Leipzig. His rocket there did not do much actual damage to the enemy; but their noise and bright glare had an effect in frightening the French and throwing them into confusion, and the Czar of Russia showed his appreciation of the inventor by making him a knight of the order of St. Anne.'—D. N. B.

3732 **COXWELL** (Henry) **MY LIFE and BALOON EXPERIENCES** [with Chapters on Military Ballooning], BOTH SERIES, Vol. I 2nd Edition, with photographic portrait, and 18 plates, 2 vols. cr. 8vo. cl., with author's inscr. (SCARCE), £1. 1s 1889

3733 **DUCHÊNE** (—, *Capitaine du Génie*) **L'AÉROPLANE étudié et calculé par les MATHÉMATIQUES ÉLÉMENTAIRES; with illustrations**, 8vo. sewn, 3s 1910

An excellent work which was awarded a prize by the French Institute. It should be a boon to the airman who would rather face the elements than the calculus.

3734 **DUHAMEL du MONCEAU** (Henri Louis, *de l'Institut*; F.R.S.) **ÉLÉMENTS de l'ARCHITECTURE NAVALE**, ou **TRAITÉ Pratique de la Construction des Vaisseaux**; with frontispiece, vignettes, and 24 folding plates, 4to. original calf gilt, 15s 1752

3735 ——— **TRAITÉ de la FABRIQUE des MANŒUVRES pour les VAISSEAUX**, ou **l'ART de la CORDERIE PERFECTIONNÉE**; with vignettes, 7 folding copperplates, and woodcuts, 4to. old calf, with bookplate of Edward 12th Duke of Norfolk, E.M., 17s 6d Imprimerie Royale, 1747

3736 ——— ANOTHER COPY, contemporary calf gilt, with arms on sides (joints cracked, otherwise a fine copy), 19s

3737 **EDYE** (John) **CALCULATIONS** relating to the EQUIPMENT, DISPLACEMENT, etc., of SHIPS and VESSELS of WAR, with 31 plates (many folding), roy. 8vo. hf. bound, with auto. of George Renne, F.R.S. (scarce), 12s 6d 1832

Dedicated to the Sailor King; scarce, and unknown to Lowndes and Allibone.

3738 **ENGINEERING CONGRESS (International): PROCEEDINGS of the Division of MARINE and NAVAL ENGINEERING and NAVAL ARCHITECTURE**, held at CHICAGO, 1893, edited by GEORGE W. MELVILLE, Engineer-in-Chief, U.S.N., with numerous folding plates and other illustrations, 2 thick vols. roy. 8vo. hf. morocco (o. p.), 17s 6d New York, 1894

Including 45 papers by some of the foremost authorities of the times. The foreign papers are translated into English.

3739 **EVANS** (Capt. Sir Frederick John Owen, R.N., F.R.S.), and **Archibald SMITH**, F.R.S.: **ADMIRALTY MANUAL for ASCERTAINING and APPLYING the DEVIATIONS of the COMPASS** caused by the IRON in a SHIP; 2nd Edition [enlarged], with 6 plates and 3 charts, roy. 8vo. cl. boards, 4s 1863

This edition contains 'History and Present State of the Deviation of the Compass,' by A. SMITH (pp. 17).

'His most important work. It has become a standard text-book, having been translated and adopted by all the great maritime nations.'—Prof. W. J. Harrison.

3740 **FAYE** (Hervé, *de l'Institut*) **COURS d'ASTRONOMIE NAUTIQUE**; with 87 diagrams, large post 8vo. hf. morocco gilt (nice copy), 6s (p. F. 10 nett sewn) 1880

XII. SEAMANSHIP AND AIRMANSHIP; NAVAL ARCHITECTURE AND ENGINEERING, *continued*.—

- 3742 **FINCHAM (John)** HISTORY OF NAVAL ARCHITECTURE; with introductory Dissertation on the Application of Mathematical Science to the Art of Naval Construction, *with 58 plates, besides diagrams*, roy. 8vo. *cl.* (*wanting title*), 9s 1851
 One of the fullest histories on the subject, copiously illustrated, and with very interesting introduction on the History of the Theory of Shipbuilding, from Huygens to Atwood (pp. 76).
- 3743 ——— OUTLINE OF SHIPBUILDING: Methods of Constructing the Body, and Instructions for making Calculations; also Investigations and Developments of Principles; the actual Building of Ships; the principal Materials used; Vocabulary of Terms; 3rd Edition, enlarged, *with 26 plates, also diagrams and folding tables*, roy. 8vo. *cl.*, 12s 6d 1852
 Last and best edition of one of the latest works on modern wooden shipbuilding—now again of live interest as a further nail in the German coffin. The theoretical part includes an exhaustive mathematical treatment.
- 3744 **FONVIELLE (Wilfrid de)** HISTOIRE de la NAVIGATION AÉRIENNE; *with 99 illustrations*, roy. 8vo. *cl. extra*, *g.e.*, 3s 6d 1910
- 3745 ——— ADVENTURES in the AIR, being memorable Experiences of great Aeronauts, translated and edited by JOHN SCOTT KELTIE, *with 35 plates and woodcuts*, post 8vo. *cl.* (*o.p.*), 6s 1877
- 3746 **FORFAIT (Pierre Alexandre Laurent)** TRAITÉ ÉLÉMENTAIRE de la MÂTURE des VAISSEAUX; *with 24 folding plates containing 190 figures*, 4to. *old calf gilt*, 16s 1788
- 3747 ——— ANOTHER COPY, *with the Royal Arms on title defaced; contemporary calf gilt*, 16s 6d
 'Tout ce qui concerne les bois, les mâts, les voilures, les vergues et les autres parties du vaisseau y est décrit avec une précision remarquable.'—*Biogr. Gén.*
 The author, who was sent to England in 1789 to study the progress of the British Navy, was president of the commission charged to prepare an armed descent on England in 1798, whose failure to come off he was doubtless able to explain.
- 3748 **GILL (J., F.R.A.S., Liverpool Corporation Nautical Coll.)** TEXT-BOOK ON NAVIGATION and NAUTICAL ASTRONOMY, *with frontispiece and 212 illustrations*, 8vo. *cl.*, 4s (*p. 10s 6d*) 1898
- 3749 **GLAISHER (James, F.R.S.; founder of the Royal Meteorological Soc.), Camille FLAMMARION, Wilfrid de FONVIELLE, and Gaston TISSANDIER**: TRAVELS in the AIR, edited by JAMES GLAISHER, *with 118 plates and woodcuts*, roy. 8vo. *new hf. green calf gilt, uncut*, *t. e. g. (name on title)*; *o. p.*, 15s (*p. £1. 11s 6d in cl.*) 1871
 Containing also important meteorological observations.
- 3750 ——— : VOYAGES AÉRIENS; *with portrait of Glaisher, 6 coloured plates, 116 woodcuts, and 15 charts*, impl. 8vo. *original hf. red morocco gilt (o. p.)*, 12s 6d 1870
- 3751 **GORDON (Thomas)** PRINCIPLES OF NAVAL ARCHITECTURE, with Proposals for Improving the Form of Ships, and Observations on the Structure of Carriages for the Purposes of Inland Commerce, Agriculture, etc. [and Dictionary of Terms], *with 5 folding plates, 8vo. boards, uncut, with author's inser.*, 10s 6d 1784
- 3752 **GREENHILL (Sir Alfred George; Prof. Mathematics, Artillery Coll., Woolwich)** The DYNAMICS of MECHANICAL FLIGHT: Lectures at the Imperial College of Science and Technology, *with 58 illustrations*, 8vo. *cl.*, 6s (*p. 8s 6d nett*) 1912
- 3753 **GRIFFITHS (John Willis, Marine and Naval Architect)** TREATISE ON MARINE and NAVAL ARCHITECTURE, or Theory and Practice blended in Ship Building, first edition, *with numerous plates*, roy. 4to. *cl.*, *uncut* (VERY SCARCE), *with auto. of George Rennie, F.R.S.*, £1. 10s *New York*, 1850
 The first important American work on shipbuilding, which flourished in the United States in the days before protective tariffs. 'It contains not a few original improvements, and a scientific treatment of masting and sparring vessels, which has been considered beyond the grasp of scientific men' (*Preface*).
- 3754 **HILDEBRANDT (Alfred Louis Heinrich)** AIRSHIPS PAST and PRESENT, with Chapters on the Use of Balloons in Connexion with Meteorology, Photography, and the Carrier Pigeon, translated by W. H. STORY, *with 222 illustrations*, 8vo. *cl.*, 5s (*p. 10s 6d nett*) 1908
- 3755 **HULLS (Jonathan)** A DESCRIPTION and DRAUGHT of a NEW-INVENTED MACHINE for CARRYING VESSELS or SHIPS out of, or into any Harbour, Port, or River, against Wind and Tide, or in a Calm. For which, His Majesty has Granted Letters Patent, for the Sole Benefit of the Author, for the Space of Fourteen Years, *with folding frontispiece representing the 'Machine' towing a Man-of-War*, 12mo. *hf. blue calf, uncut, by Riviere (nice copy)*; VERY SCARCE, £1. 15s [1855: Reprint of] 1737
 Hulls was a Gloucestershire man of Chipping Campden.
 'He was the first who attempted practically to employ steam in propelling a vessel in water. His experiments were made on the Avon at Evesham in 1737, the main idea being to have a Newcomen engine—the only sort then known—on a tow-boat in front of the vessel which it was intended to propel, and connected with it by a tow-rope. Six paddles in the stern of the tow-boat were fastened to a cross axis connected by ropes to another axis which was turned by the engine. Hulls undoubtedly showed how to convert the rectilinear motion of a piston-rod into a rotatory motion, which is an essential principle in steam locomotion whether on land or water. But his experiment was a failure, and only excited derision.'—*D. N. B.*
 Only 39 copies were issued of this reprint by J. SHEEPSHANKS (perhaps Mr. John Sheepshanks, the munificent giver of the collection of paintings at the South Kensington Museum), of which the above is No. 24, and bears his autograph inscription.
- INSTITUTION OF NAVAL ARCHITECTS: TRANSACTIONS—v. No. 156.**
- 3756 **KAISER (P. J.)** THEORIE en BESCHRIJVING der thans bij de NEDERLANDSCHE MARINE in Gebruik zijnde ZEEVAARTKUNDIGE WERKTUIGEN; *with 18 plates (mostly folding and finely COLOURED), besides numerous diagrams*, 2 vols. impl. 4to. *sewn*, 12s 6d Leiden, 1880-3
 INHOUD:—I. Kompassen, benevens enkele andere werktuigen. II. Reflexie-instrumenten, artificieele Horizonten.
- 3757 **KELVIN (Sir William Thomson, Lord, P.R.S., Prof. Natural Philosophy, Glasgow)** NAVIGATION: a Lecture in the City Hall, Glasgow, 11th November, 1875, *with 17 woodcuts*, cr. 4to. *sewn (scarce)*, 3s 6d 1876
 'It is a common saying that sailors are stupid; but I thoroughly and heartily repudiate it, not from any sentimental fancy, but from practical experience. No other class of artisans is more intelligent; and, moreover, sailors' wits are kept sharp by the ever nearness of difficulties and dangers to be met by ready and quick action.'—*P. 1.* The British mercantile marine has shown the Germans this for the last three years, and has won the Allies the war.

XII. SEAMANSHIP AND AIRMANSHIP; NAVAL ARCHITECTURE AND ENGINEERING, *continued* :—

- 3759 **LAAS** (Walter; Charlottenburg) Die GROSSEN SEGELSCHIFFE : ihre Entwicklung und Zukunft ; with 77 illustrations (including folding plates), cr. 8vo. sewn, 4s (p. M. 6) Berlin, 1908
- 3760 **LACROIX** (— de, Commissary General of the Marine) ABSTRACT on the MECHANISM of the MOTIONS of FLOATING BODIES, translated by ADML. [SIR CHARLES] KNOWLES, with folding plate, 4to. (p. 53), sewn (scarce), 8s 6d 1775
- 3761 ——— ANOTHER COPY, *hf. calf*, 10s
 'Containing more knowledge in the art of ship-building than any other book hitherto published that I have met with. The principles the author proceeds upon are just and true ; I have tried them by a number of experiments, and they agree exactly with the calculations he gives : but what proved most satisfactory to me was their answering perfectly well when put into practice, in several line of battle ships and frigates, that I built when I was in Russia. CHARLES KNOWLES.'—*Preface*.
- 3762 **LANCHESTER** (Frederick William, M.I.C.E.) AERODYNAMICS, with Appendixes on the Velocity and Momentum of Sound Waves, on the Theory of Soaring Flight, etc., with 2 plates and 161 other illustrations, thick 8vo. cl., 12s 6d (p. £1. 1s nett) 1907
- 3763 ——— The FLYING MACHINE from an ENGINEERING STANDPOINT, with plate and 55 illustrations, 8vo. cl., 3s (p. 4s 6d nett) 1916
- 3764 ——— TWO PAPERS : The AEROFOIL and the SCREW PROPELLER, with 2 folding plates and numerous text-illustrations, 8vo. cl., 2s 6d (p. 3s 6d nett) 1915
- 3765 **LECKY** (Capt. Squire Thornton Stratford, F.R.A.S.) 'WRINKLES' in PRACTICAL NAVIGATION ; 14th Edition, enlarged, with fine portrait, and 130 plates and other illustrations, thick roy. 8vo. cl., 12s 6d (p. £1. 5s nett) 1904
- 3766 **LESCALLIER** (Daniel Baron) TRAITÉ PRATIQUE du GRÉEMENT des VAISSEAUX et autres Bâtimens de Mer ; with 34 fine copperplates (mostly folding), 2 vols. 4to. old calf (rare), 17s 6d 1791
- 3767 ——— ANOTHER COPY, 2 vols. in 1, old English calf (nice copy), 18s 6d
 An interesting treatise not only on rigging ships, but on French naval architecture at a time when it excelled in some respects (and often unwillingly enriched) even that of England.
- 3768 ——— VOCABULAIRE des TERMES de MARINE ANGLAIS et FRANÇOIS, avec une Explication des Figures qui y sont contenues, et des Définitions de quelques Termes de Marine, principalement ceux de Gréement ; with 31 fine copperplates and 2 vignettes on copper, 4to. fine copy in contemporary French calf extra, 15s Imprimerie Royale, 1777
- 3769 **LESLIE** (Sir John ; F.R.S.E., Univ. Edin.) AEROSTATION : an Article contributed to the 'Encyclopædia Britannica,' 4th Edition, Supplement, with copperplate, 4to. (pp. 12), unbound, 6s 6d [1815]
- 3770 **LUNARDI** (Vincent, Secretary to the Neapolitan Ambassador) ACCOUNT of the FIRST AERIAL VOYAGE in ENGLAND, in Letters to his Guardian CHEVALIER GHERARDO COMPAGNI, written under the Impressions of the various Events that affected the Undertaking, first edition, with fine portrait by F. BARTOLOZZI after Cosway (mounted and slightly soiled), and 2 folding copperplates of the balloon and filling apparatus (the former clumsily mended), 8vo. hf. calf (joints cracked, and some ll. soiled), with AUTHOR'S SIGNATURE on flyleaf (RARE), £1. 10s printed for the author, 1784
- 3771 ——— The portrait in the above copy is often missing.
 SECOND EDITION, with the 2 folding plates, 8vo. calf antique (a few slight stains on title, otherwise a FINE AND TALL COPY), with AUTHOR'S SIGNATURE on flyleaf (RARE), £1. 1s 1784
 'After various delays and apprehensions, Lunardi, having made his will, ascended from the Hon. Artillery Co.'s ground at Moorfields on 15 Sept. 1784, in the presence of nearly 200,000 spectators. The balloon was about 32 feet in diameter, and was filled with hydrogen under the direction of Dr. George Fordyce. He sailed over London at a great height, and descended near Ware. The attempt excited great interest among all classes. . . . The king viewed the balloon through a telescope from the Queen's presence chamber at St. James's. Several descriptions were printed, the best of which is that written by Lunardi himself.'—D. N. B.
 An appendix contains attestations by eye-witnesses, and a poetical effusion addressed to the author.
- 3772 **McDERMAID** (Neil J.) SHIPYARD PRACTICE as applied to WARSHIP CONSTRUCTION, with numerous illustrations (many full-page), roy. 8vo. cl., 8s (p. 12s 6d nett) 1911
- 3773 **MACKAY** (Andrew, F.R.S.E. ; Keeper of Aberdeen Observatory) THE THEORY and PRACTICE of FINDING the LONGITUDE at SEA or on LAND : with various Methods of determining the LATITUDE of a Place, and VARIATION of the COMPASS, with Tables, first edition, with 7 folding copperplates, 2 vols. 8vo. in 1, cl., or, boards, uncut, 9s 1793
- 3774 ——— ANOTHER COPY, contemporary hf. calf, uncut (sound copy), 10s 6d
- 3775 ——— SECOND EDITION, improved and enlarged, with fine portrait by J. Heath, and 8 folding plates, 2 vols. 8vo. old calf, 12s 6d Aberdeen, 1801
- 3776 ——— THIRD [LAST] EDITION, enlarged, with 8 folding plates, 2 vols. roy. 8vo. cl., 12s 6d 1810
 'In this work is given an account of a new method of finding the longitude and latitude of a ship at sea, together with the apparent time, from the same set of observations ; for which the author had received the thanks of the Boards of Longitude of England and France.'—D. N. B.
- 3777 **MARION** (Fulgence) Les BALLONS et les VOYAGES AÉRIENS, première édition ; with 30 fine woodcuts (chiefly full-page) of historical ascents by P. Sellier, post 8vo. hf. cl., uncut, 6s 1867
- 3778 ——— WONDERFUL BALLOON ASCENTS ; or the Conquest of the Skies : a History of Balloons and Balloon Ascents, translated from the French, with plates and woodcuts, post 8vo. cl., 4s [1870]
- 3779 **MASTS** : The ART of MAKING MASTS, YARDS, GAFFS, BOOMS, BLOCKS, and OARS, as practised in the Royal Navy, and according to the most approved Methods in the Merchant Service, including a Description of an Improved Rule for Mast Makers, also a New Method by which Large Yards may be made from Small Trees, and Repaired when Sprung in the Slings, with 3 copperplates (2 folding), and numerous woodcuts, 8vo. old calf (rare), 10s 6d 1797
 This work was unknown to Watt and Halkett and Laing.

XII. SEAMANSHIP AND AIRMANSHIP; NAVAL ARCHITECTURE AND ENGINEERING, *continued*:—

- 3781 **MAGNETISM of SHIPS** (The), and the DEVIATIONS of the COMPASS: a SERIES of PAPERS from the Transactions of Foreign Societies, by POISSON, [SIR] G. B. AIRY, ARCHIBALD SMITH, [CAPT. SIR] FREDERICK JOHN [OWEN] EVANS, R.N., and W. W. RUNDELL, and other Papers and Documents, reprinted under the Direction of COMMRE. THORNTON A. JENKINS, U.S.N., edited, with Memoir of Poisson translated, by B. FRANKLIN GREENE, C.E., with numerous plates (*many folding*), and woodcuts, large 8vo. *hf. russica* (SCARCE), with U.S. Bureau of Navigation's bookplate, £1. 5s Washington, 1867

- 3782 ——— [VOL. II], comprising the THREE REPORTS of the LIVERPOOL COMPASS COMMISSION, with additional Papers by ARCHIBALD SMITH, F.R.S., and CAPT. SIR FREDERICK JOHN OWEN EVANS, R.N., with numerous plates and charts (*many folding*), and woodcuts, large 8vo. *hf. roan gilt* (SCARCE), 15s *ibidem*, 1869

*These reports are by very far the most important documents in reference to the difficult subjects of the magnetism of iron ships, the change of magnetism, the correction of the compass, and the adjustment of the correcting apparatus, that have yet appeared. —Sir G. B. Airy, F.R.S.

- 3783 [MASON (Thomas Monck)] AERONAUTICA; or Sketches illustrative of the Theory and Practice of Aerostation: comprising an ENLARGED ACCOUNT of the late AERIAL EXPEDITION to GERMANY [with CHARLES GREEN and ROBERT HOLLOND, M.P.], with 5 striking plates on stone, 8vo. *hf. calf gilt* (*front. wanting*); SCARCE, 17s 6d 1838

*The introduction of coal-gas, instead of hydrogen, by Mr. Green, is the most important advance in aerostation since the earliest days of the art. His large coal-gas balloon, in 1836, bore Messrs. Green, Hollond, and Mason from London to Wellburg in Nassau, distant 500 miles, in 18 hours.

Who was the above Monck Mason? He does not appear among the Monck Masons in D. N. D., and his Christian name of Thomas only appears in the concluding verses 'Den Herren Karl Green, Robert Hollond, und Thomas Monck Mason at p. 354 of the 'Aeronautica'.

- 3784 **MAXIM (Sir Hiram Stevens)** ARTIFICIAL and NATURAL FLIGHT, with 95 illustrations, 8vo. *cl.*, 3s (p. 5s nett) 1908

Sir Hiram Maxim's interest in flying-machines began in 1856, when his father had already designed a helicopter. They could not get further, because the internal-combustion engine had not then been invented. Would that it never had!

- 3785 **MEDINA (Pedro de)** L'ART de NAVIGUER, contenant toutes les règles, secrets, et enseignemens nécessaires à la bonne navigation, traduit de Castillan en François, avec augmentation et illustration de plusieurs figures et annotations, par NICOLAS DE NICOLAI: with fine woodcuts, and numerous diagrams, 4to. old limp vellum (*map wanting, but a large and very sound copy*); RARE, £2. 2s Lyon, Guillaume Rouille, 1569

A finely printed edition.

- 3786 ——— NOUVELLE ÉDITION, reueue et corrigée de nouveau outre les precedentes Impressions; with woodcuts and diagrams, and folding map showing America (*defective*), sm. 4to. old vellum (*some ll. stained*), £3. 3s Rouen, R. Mallard, etc., 1577

The map included in the above edition is remarkable for its large amount of information on AMERICA.

- 3787 ——— L'ARTE del NAVEGAR, in laqual si contengono le Regole, Declarationi, Secreti, et Avisi, alla bona Navigation necessari, tradotta in volgar Italiano [da VICENZO PALETINO DA CORZULA]; with woodcuts, diagrams, and map (*including AMERICA*), sm. 4to. white vellum (*sound copy*); very rare, £3. 10s Venetia, G. Pedrezano, 1555

THE FIRST ITALIAN EDITION.

- 3788 ——— NUOVA EDIZIONE, di nuovo ampliata e corretta; with woodcuts, diagrams, and map (*showing AMERICA*), sm. 4to. sound copy in contemporary vellum (RARE), £2. 2s *ib.*, T. Baglioni, 1609

The sixth book contains an interesting account of the mariner's compass, in which however the author still denies that the declination of the magnetic needle differs at different places. The third book contains a copious account of winds, while the second teaches how to foretell storms by the sun and the moon.

- 3789 **MOEDERBECK (Major Hermann W. L., Baden Artillery), O. CHANUTE, and others:** POCKET-BOOK of AERONAUTICS: authorized English Edition, translated by W. MANSERGH VARLEY, with 141 illustrations, fcap. 8vo. boards, r. e. (o. p.), 5s (p. 10s 6d nett) 1907

- 3790 **MURRAY (Mungo; Deptford Dockyard, and H.M.S. Magnanime)** TREATISE on SHIP-BUILDING and NAVIGATION: the Theory, Practice, and Application of all the necessary Instruments, with the Construction and Use of the new Invented SHIPWRIGHT'S SECTOR, Tables of the Sun's Declination, etc. etc., with an ENGLISH ABRIDGMENT of another TREATISE on NAVAL ARCHITECTURE, by M. DUHAMEL; 2nd [BEST] EDITION, with SUPPLEMENT, containing a Translation of what M. BOUGUER has written on that Subject, and M. DUHAMEL'S Method of finding the Center of Gravity, with some Remarks by the AUTHOR, with 23 folding plates, thick 4to. sound copy in old calf, 15s 1765

One of the earliest systematic treatises in the language on Shipbuilding.

- 3791 **NAVAL ARCHITECTURE**, PAPERS on, and other Subjects connected with NAVAL SCIENCE, conducted by WILLIAM MORGAN and AUGUSTIN CREUZE, Naval Architects, with 25 folding plates, COMPLETE in 4 vols. 8vo. calf (v. IV sewn); SCARCE, £1. 1s 1826-32

Including original contributions by George Atwood, F.R.S., Lt.-Gen. Sir Philip Bainbrigge, Robert Bill, Adml. F. H. af Chapman, Charles Dupin, Adml. Sir George Elliot, John Fincham, Sir William Snow Harris, F.R.S., John Knowles, F.R.S., Capt. H. E. Napier, R.N., F.R.S., Sir Robert Seppings, F.R.S., etc. etc. etc. The work is very scarce complete as above, vol. IV being often missing.

- 3792 ——— **ENGINEERING:** TRANSACTIONS of the WORLD'S COLUMBIAN EXPOSITION ENGINEERING CONGRESS. Section G. Division of Marine and Naval Engineering and Naval Architecture, with numerous plates (*many folding*), and woodcuts, 2 vols. roy. 8vo. *cl.*, 15s (p. £2. nett) [New York, 1893]

A collection of valuable memoirs by Sir Nathaniel and S. W. Barnaby, Henry Benbow, R.N., E. S. Cramp, Prof. W. F. Durand, Nelson Foley, Ira N. Hollis, James Howden, M.I.C.E., B. F. Isherwood, U.S.N. Robert Mansel, W. J. Millar, C.E., Lewis Nixon, J. R. Oldham, A. E. Seaton, M.I.C.E., and others.

XII. SEAMANSHIP AND AIRMANSHIP. NAVAL ARCHITECTURE AND ENGINEERING, *continued* :—

- 3794 **PAIXHANS** (Général Henry Joseph; *inventor of the Paixhans Gun*) NOUVELLE FORCE MARITIME, et Application de cette Force à quelques Parties du Service de l'Armée de Terre; ou Essai sur l'État Actuel des Moyens de la Force Maritime, sur une ESPECE NOUVELLE d'ARTILLERIE de MER, qui détruirait promptement les Vaisseaux de Haut-Bord, sur la Construction de Navires à Voile et à Vapeur, de Grandeur Modérée, qui armés de cette Artillerie, donneraient une Marine moins Couteuse et plus Puissante que celles existantes, et sur la Force que le Système de Bouches-à-Feu proposé offrirait à Terre; *with 7 folding plates*, 4to. *sewn* (SCARCE), 15s 1822

Important as one of the first works to advocate the use of steel armour for warships to protect them against the devastating effect of the author's own gun.

- 3795 **PARIS** (Vice-Amiral François Edmond; *de l'Institut*) ESSAI sur la CONSTRUCTION NAVALE des PEUPLES EXTRA-EUROPEËNS, ou Collection des Navires et Progues construits par les Habitants de l'Asie, de la Malaisie, du Grand Océan et de l'Amérique; *with 132 fine lithographic and other plates*, 2 vols. impl. folio, *hf. russica (fores and bindings badly damaged)*, £3. 3s (p. F. 200) [1841]

One of the most valuable works on the shipping craft of the non-European races. The plates are remarkably well executed, and contain full-size lithographic views of the various types of native ships, besides constructional details.

- 3796 ——— SOUVENIRS de MARINE : COLLECTION de PLANS ou DESSINS de NAVIRES et de BÂTEAUX ANCIENS et MODERNES existants ou disparus, avec les Éléments numériques nécessaires à leur Construction, Parties I—II, édition originale; *with 120 large and fine plates*, 2 vols. large atlas folio, *cl. (back of vol. I slightly damaged)*, £1. 5s (p. F. 50 nett) 1822-4

'Cette collection a été entreprise dans le but de préserver les constructions maritimes actuelles de l'oubli, où sont tombées presque toutes celles qui les ont précédées. Elle est exécutée d'après les idées d'exactitude, qui malheureusement excluent le pittoresque trompeur qui est souvent le mieux accueilli.'—*Préface*.

- 3797 ——— TRAITÉ de l'HÉLICE PROPULSIVE, publié sous les Auspices du Ministère de la Marine et des Colonies; *with coloured frontispiece of the S.S. Himalaya*, and 15 *folding plates, woodcuts, and folding tables*, impl. 8vo. *sewn, with auto. of George Rennie, C.E., F.R.S.*, 8s 6d 1855

The first part (pp. 1-271) consists of a translation of John Bourne's 'Treatise on the Screw-Propeller.'

- 3798 **PEABODY** (Oecil Hobart, *Mass. Inst. Technology*) PROPELLERS, *with 29 diagrams*, 8vo. *cl.*, 3s 6d (p. 5s 6d nett) New York, 1912

'Giving a reliable and convenient method of designing propellers, based on model experiments, and free from theoretical intricacies and uncertainties.'—*Préface*.

- 3799 **PERING** (Richard, *Clerk of the Cheque of Plymouth Dockyard*) TREATISE on the ANCHOR, how the component Parts should be combined to obtain the greatest Power, and most perfect Holding, with a Table of Dimensions, from 1 to 95 Cwt.: and a Schedule of proportionate Weights of Anchors, suitable to the Tonnage of every Class of Vessel, etc., with Observations on the CHAIN CABLE, shewing its Proportion to that of Hemp, and to the Weight of the Anchor, *with 3 folding plates*, roy. 8vo. *cl.*, or, *sheep (scarce)* 10s 6d Plymouth Dock [*hodie Devonport*], 1819

This work claims to be the first practical treatise on the construction of the anchor. It contains an improved anchor and anchor weight of the author's own invention. There was no copy in the Scott Library.

- 3800 **PHILLIPES** (Henry, *Philo-Nauticus*) The SEA-MAN'S KALENDER: or, an Ephemerides of the Sun, Moon, and certain of the most notable Fixed Stars, also a TABLE of the LONGITUDE and LATITUDE of all the most eminent Places of the World, first calculated by JOHN TAP, corrected, with New Exact TABLES of the NORTH STAR; New TABLES of 65 of the principal FIXED STARS, etc., with a DISCOVERY of the Way to Find the Long Hidden SECRET of LONGITUDE, by HENRY BOND, now newly calculated and corrected, and many Rules and Tables added, *with woodcuts (with the full-page one on p. 11 intact)*, sm. 4to. *large and sound copy in contemporary sheep (back damaged)*; RARE, *with Tixall Library label*, £1. 10s W. Godbid for E. Hurlock, 1674

'It is a Compendium (if well understood) of the whole Art of Navigation. But its chiefest excellency consists in the Astronomical part thereof; the Tables whereof are so plain and full, and well ordered, that there never were the like in any Book.'—*Address to the Ingenious Sea-man*. At end is a table, giving the latitude and longitude of over 1000 places, by T. STERN, globe-maker.

The work was unknown to Lowndes, while Watt only quotes an edition of 1696. There was no copy of any edition in the Scott Library, nor is there one in that of the Institution of Naval Architects.

- 3801 **POLLARD** (J.), et A. DUDEBOUT, professeurs à l'École du Génie Maritime: ARCHITECTURE NAVALE: THÉORIE du NAVIRE; *with 3 folding plates, and 764 other illustrations*, 4 vols. roy. 8vo. *hf. green morocco neat*, £1. 10s (p. F. 54 nett sewn) 1890-4

CONTENU :—I. Calcul des Éléments Géométriques, des Carènes droites et inclinées. Géométrie du Navire : II. Statique et Dynamique du Navire. Roulis en Milieu calme, résistant ou non résistant : III. Dynamique du Navire. Mouvement de Roulis sur Houle. Résistance des Carènes : IV. Dynamique du Navire. Mouvements rectiligne horizontal oblique et curviligne. Propulsion. Vibrations des Coques des Navires à Hélice.

- 3802 **POOLE** (John; *dramatist*) CROTCHETS in the AIR; or an (Un)scientific Account of a Balloon Trip, in a Familiar Letter to a Friend; 2nd Edition, 8vo. *original figured cl.*, *with balloon in gold in centre (scarce)*, 10s 6d 1838

Hatton Turnor, who quotes very fully from the above work in his *Astra Castra*, writes 'I much regret that I have not been able to find the name of the author of the amusing paper entitled 'Crotchets in the Air'.' He might have done so, had he procured a copy with the title-page.

It includes an account of the disastrous ascent of Mme. Blanchard, which the author witnessed while staying in Paris.

- 3803 **POTAIN** (Le Docteur, *ex-chirurgien principal d'armée*) RELATION AÉROSTATIQUE, dédiée à la NATION IRLANDAISE; *with fine and large lithographic portrait by Boilly after Bordes, and view of the balloon in mid-air*, 4to. (pp. 32), *hf. cl.*, *uncut, with the original cover lettered 'Historique d'un Voyage Aérien' bound in (FINE COPY)*; VERY RARE, £2. 15s 1824

The above copy contains 'Documents et Pièces principales à l'Appui du présent Mémoire' (pp. 6), containing the deliberations and correspondence of the Irish Committee, which included the ill-fated Lord Edward Fitzgerald, the Earl of Moira (afterwards Marquess of Hastings), and many other well-known Irishmen.

The work, as well as the ascent (at Dublin, June 17, 1785), was unknown to Hatton Turnor.

XII. SEAMANSHIP AND AIRMANSHIP. NAVAL ARCHITECTURE AND ENGINEERING, *continued* :—

- 3805 **RAPER** (Lieut. Henry, R.N., F.R.A.S.) *THE PRACTICE OF NAVIGATION AND NAUTICAL ASTRONOMY*; 14th Edition [partly revised by STAFF COMM. THOMAS A. HULL, R.N.], with *diagrams*, thick roy. 8vo. *old sheep (back damaged)*, 6s 6d 1882
 'It was at once recognised as the best work on the subject, a position which it still holds in the opinion of practical navigators.'—*Sir J. K. Laughton*. 'Particularly valuable for its admirable table of [8900] geographical positions.'—*Adm. Smyth*.
- v. SCIENTIFIC MEMOIRS, No. 394.
- 3806 **RÖDING** (Johann Hinrich [sic]) *ALLGEMEINES WÖRTERBUCH DER MARINE* in allen europäischen Sprachen [DEUTSCH, HOLLÄNDISCH, DÄNISCH, SCHWEDISCH, ENGLISCH, FRANZÖSISCH, ITALIENISCH, SPANISCH und PORTUGIESISCH], nebst vollständigen Erklärungen; with 115 copper-plates, 4 vols. 4to. *sound copy in old calf gilt*, £1. 1s Hamburg [1794-8]
 The most complete dictionary of sea terms ever published, and especially interesting for those of the old sailing days.
- 3807 **ROEDDER** (O. C.) *DIE ELEKTROTECHNISCHEN EINRICHTUNGEN MODERNER SCHIFFE*; with 2 plates and 222 illustrations, impl. 8vo. *sewn*, 4s 6d (p. M. 8.60) Wiesbaden, 1903
 Including wireless telegraphy installations on shipboard.
- 3808 **BONDELET** (Jean, de l'Institut) *MÉMOIRE SUR LA MARINE DES ANCIENS, ET SUR LES NAVIRES À PLUSIEURS RANGS DE RAMES*; with 10 folding copperplates, roy. 4to. *sewn (rare)*, 15s
chez l'auteur, 1820
 This is probably the only complete work ever written on this interesting subject, and fully discusses those galleys of many-banked oars which added a horror of their own to the slavery of a cultured and philosophical Antiquity. There was no copy of the work in the Scott Library, nor is there one in that of the Institution of Naval Architects.
- 3809 **RUSSELL** (John Scott, F.R.S.) *THE MODERN SYSTEM OF NAVAL ARCHITECTURE*, with 165 large and fine plates, 3 vols. large atlas folio, *hf. morocco gilt, t. e. g.*, £2. 12s 6d (p. £42.) [1864-5]
 The most magnificent work on the subject ever published. The author was the builder of the 'Great Eastern' steamship, and joint designer of the 'Warrior,' the first sea-going armoured frigate. 'He discovered the existence of the wave of translation (cf. No. 2283 ante), and developed the wave-line system of construction of ships.'—D. N. B.
- 3810 **SAIL-MAKING**, *THE ART OF*, as practised in the ROYAL NAVY, and according to the most approved Methods in the Merchant Service, with the PARLIAMENTARY REGULATIONS relative to SAILS and SAIL CLOTH, with etched frontispiece of a sail-loft with its tackle, and numerous woodcuts of all the sails, and elaborate tables of dimensions, 8vo. boards, *uncut (rare)*, 12s 6d David Steel, 1796
 Very interesting as showing the elaborate art and science which went to give motive power to the old man-of-war, and made possible the manœuvres which gave England victory after victory.
 There was no copy of this edition in the Scott Library, which contained only those of 1821 and 1843, nor is there a copy of any edition in the Library of the Institution of Naval Architects.
 At end is a 4-p. Catalogue of Charts, Pilots, and Navigation Books, sold by Heather and Williams.
- 3811 **SAVERY** (Thomas) *NAVIGATION IMPROV'D: OR, THE ART OF ROWING SHIPS* of all Rates, in CALMS, with a more easy, swift, and steady Motion, than Oars can; also, a DESCRIPTION of the ENGINE that performs it; and the Author's Answer to all Mr. Dummer's Objections that have been made against it, original edition, with folding plate, and 3 smaller engravings on copper, sm. 4to. (pp. 30), *sewn (folding plate in fs., but the smaller engravings in the GENUINE ORIGINAL STATE)*; very rare, £5. 5s printed and sold by James Moxon, at the Atlas in Warwick-Lane, 1698
- 3812 ——— *FACSIMILE REPRINT, with folding plate, and 3 woodcuts*, cr. 4to. *hf. parchment* (only 70 COPIES PRINTED), 17s 6d [1880]
 'In 1696 he invented a contrivance for rowing ships in a calm by means of two paddle-wheels, one at each side of the vessel, worked by a capstan placed between. William III. thought highly of it, but, although Savery demonstrated its practicability by fitting it to a small yacht, official jealousy prevented its adoption by the navy. He was obliged to content himself by publishing an account [the above] of his invention. . . This treatise contained a vehement protest against the treatment accorded him in official circles.'—D. N. B.
- 3813 **SCHIEFFER** (Johann) *DE MILITIA NAVALI VETERUM Libri IV, ad Historiam Græcam Latinamque utiles*; with frontispiece and 3 other fine copperplates, and numerous interesting woodcuts, sm. 4to. *old vellum (small hole in front., and binding somewhat defective)*, with fine engraved bookplate by du Vivien, of Liège, and of Thomas Phillips of Ickford (1708-74), with another of Francis North Lord Guilford, 1703 (rare), £1. 10s Uxalieu, Joh. Jansson, 1654
- 3814 ——— *ANOTHER COPY, printed on stouter paper, but without the 3 copperplates*, 4to. *old vellum (back of binding damaged, otherwise a FINE COPY)*, with bookplate of Patrick Hume, first Earl of Marchmont, 1702, £1. 1s
 This is next to Snellius's the earliest work on the naval arts of the ancients. It is chiefly collected from the Greek and Roman Classics, and treats the subject far more fully than that of Snellius, which is more exclusively devoted to navigation, while the present work treats more especially of naval architecture.
- 3815 **SCHWARZ** (Tjard), und Ernst v. HALLE: *SCHIFFBAUINDUSTRIE IN DEUTSCHLAND UND IM AUSLANDE, UNTER BENUTZUNG AMTLICHEN MATERIALS HERAUSGEGEBEN*; with 17 folding plans of dockyards and 5 folding tables, 2 vols. sq. roy. 8vo. cl., 12s 6d (p. M. 22.25 nett) Berlin, 1902
 The above copy is an interesting memorial of the German Naval murders, as it contains a printed presentation form to Dr. Francis Elgar, P.I.N.A., F.R.S., from their initiator Grand Admiral von Tirpitz.
- 3816 **SEATON** (Albert Edward, M.I.C.E.) *THE SCREW PROPELLER*, and other competing Instruments for Marine Propulsion, with 7 plates, and 65 diagrams, large 8vo. cl., 8s (p. 12s 6d nett) 1909
- SEPPINGS** (Sir Robert, Surveyor of the Navy, F.R.S.) *NEW PRINCIPLE OF CONSTRUCTING SHIPS OF WAR* (1814)—v. SCIENTIFIC MEMOIRS, No. 394.
- 3817 **SHIPBUILDING**, THEORETICAL AND PRACTICAL, illustrated from Drawings by some of the most eminent British Shipbuilders, by ISAAC WATTS, W. J. M. RANKINE, F.R.S., FREDERICK K. BARNES, and JAMES ROBERT NAPIER. Corresponding and General Editor W. J. M. RANKINE, with 44 large plates (mostly folding), and over 100 woodcuts and diagrams, atlas 4to. in 30 parts as issued, £1. 1s (p. £3. 15s) 1866
 Including: Hydraulics of Shipbuilding: Geometry of Shipbuilding: Strength of Materials: Practical Shipbuilding in Wood and Iron: Masts, Sails, and Rigging: Marine Steam Engineering: Shipbuilding for Purposes of War.

XII. SEAMANSHIP AND AIRMANSHIP. NAVAL ARCHITECTURE AND ENGINEERING, *continued* :—

- 3819 **SHIPWRIGHT'S VADE-MECUM (The)** : a Clear and Familiar Introduction to the PRINCIPLES and PRACTICE of SHIP-BUILDING : including the more complex Rules of Arithmetic made Use of in that Art ; with so much of the Principles of Practical Geometry and Mensuration as are required in the Practice thereof ; also a Description of the SLIDING RULE ; Rules for the Admeasurement of Timber, etc., *first edition, with frontispiece and numerous woodcuts, large 8vo. boards (scarce), 12s 6d* 1805
There is no copy of this work in the Library of the Institution of Naval Architects, while the Scott Library only contained the edition of 1822.
- 3820 **SHORLTAND (Vice-Adml. Peter Frederick)** NAUTICAL SURVEYING, published by his WIDOW and CHILDREN, *with 80 diagrams, 8vo. cl. (o. p.), 10s (p. £1. 1s)* 1890
- 3821 **SIMPSON (George, M.I.N.A.)** The NAVAL CONSTRUCTOR : a Vade Mecum of Ship Design, *with 288 diagrams, fcap. 8vo. roan, 7s 6d (p. 16s nett)* New York, 1904
- 3822 **SOCIÉTÉ MARITIME DE PARIS**, BULLETIN de la, Tome I ; *with folding plan and map (pp. 660) : CONSIDÉRATIONS sur les MARINES à VOILES et à VAPEUR de France et d'Angleterre, par un LIEUTENANT DE VAISSEAU (pp. 51) : NOTE sur l'ÉTAT des FORCES NAVALES de la FRANCE (pp. 40)—in one vol. 8vo. hf. calf, with auto. of GEORGE RENNIE, C.E., F.R.S. (SCARCE), £1. 1s* 1844
This seems to have been the only volume published by the Society, founded to help 'à conserver à la France le rang qu'elle occupe et qui la place à la tête de toutes les marines secondaires pour la protection de l'indépendance navale de tous les peuples et de la liberté des mers.'
There was no copy of this work in the Scott Library, nor is there one in that of the Institution of Naval Architects.
- 3823 **STEBBING (Frank Cole, Chaplain and Naval Instructor, R.N.)** NAVIGATION and NAUTICAL ASTRONOMY, *with 140 diagrams, 8vo. cl., 4s 6d (p. 8s 6d nett)* 1896
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Both editions contain a second part, with a separate title-page : The PRICES of the LABOUR in SHIP-BUILDING Adjusted : or the Mystery of Ship-Building Unveiled, being a brief Explanation of the Labouring Part in Ship-Building ; from a Ship of the biggest Magnitude to a small Boat, first shewing the Working of the whole Ship, according to the Length, Breadth, Depth and Girt, and then by Sub-divisions shews the Value of every particular Part (pp. 286).
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A description of the first partly-successful controllable balloon, the forerunner of the colossal and oligoetousonuties of Count Zeppelin.
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The historical portion is very valuable, and is often quoted in Hatton Turnor's 'Astra Castra'. It is moreover the only work giving an adequate account of AMERICAN BALLOONING, and the fullest description of the author's own ascents. He designed a new balloon known as Wise's Transatlantic Balloon.
'Some of Wise's ascents were highly interesting, and their number and daring character justified his title to be considered the foremost American aeronaut'.—*Valentine and Tomlinson's Travels in Space.*
It is interesting that a copy should have belonged to Shelley's son.
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'He was the means of rescuing from oblivion the first marine engine ever made, that invented by William Symington (1763-1831).—D. N. B.

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Interesting as a pictorial record of early types of flying machines and dirigibles.

- 3837 **ZAMBECCARI (Francesco Conte)** DESCRIZIONE della MACCHINA AEROSTATICA destinata a tentare il Regolamento della medesima per l'Atmosfera; *with 3 folding copperplates, also plate containing portrait of Orlandi of Bologna, and illustration of his Balloon* (? 1828) INSERTED, 8vo. (pp. 32), boards (RARE), £1. 5s *Bologna, 1803*

- 3838 — ANOTHER COPY, *wanting plate 1, sewn, 10s*

Unknown to Hutton Turnor. The author made the first aerostatical experiment in England, sending up in Nov. 1783 a balloon from the Artillery Ground, which was found 2½ hours afterwards at Graffham, near Petworth in Sussex. He ascended himself in a balloon of his own construction in Bologna on Oct. 7th, 1803, when the balloon reached so great a height that the author lost two fingers on one hand from frostbite. He lost his life in another ascent in 1812.

The above work contains a very interesting catalogue of the cost of a balloon and its parts, and the scientific instruments required for observations.

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An account of the successful raising of the Venetian 74-Gun Frigate *La Fenice* after she had been sunk for three years. It is probably the earliest pictorial account of the saving of a ship. There is no copy of this work in the Library of the Institution of Naval Architects.

'Bella edizione. E opera interessantissima per gli studiosi della meccanica applicata alla nautica.'—Riccardi.

XIII. ADDENDA:

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'L'auteur cherche à prouver qu'il n'y a rien de plus pernicieux pour la vie des hommes et le salut de leurs âmes que les arts et les sciences.'—*Biogr. Gén.*

There is no copy of this edition in the British Museum.

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- 3842 — ANOTHER COPY, *old vellum (SOUND AND VERY TALL COPY), £2. 5s*

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- 3843 **AIKEN (Arthur; f.c.s., and Charles Rochemont)** DICTIONARY of CHEMISTRY and MINERALOGY, with the Processes employed in many of the most important Chemical Manufactures, a Description of Chemical Apparatus, and various useful Tables of Weights and Measures, Chemical Instruments, etc. etc., *with 15 copperplates, chiefly of chemical apparatus, 2 vols. 4to. hf. calf gilt, 17s 6d* 1807

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- 3845 **ASTRONOMICAL SOCIETY (ROYAL)**, MONTHLY NOTICES of the, containing Papers, Abstracts of Papers, and Reports of the Proceedings of the Society, COMPLETE from May, 1876 to 1916 (Vols. XXXVI No. 7 to LXXVI), with GENERAL INDEX to vols. 30-52, *with numerous plates, woodcuts, and maps, 48 vols. and 3 parts 8vo. the Index in boards, and the rest in parts as issued (wanting v. 37 No. 9), £7. 15s* 1876-1916

XIII. ADDENDA, continued:—

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Parisii, Christ. Wechel, 1545

The latest and most correct edition of the 'Alfonsine Tables' (edited by PASQUIER DUHAMEL), an improvement of the *Almagest*, undertaken by command of Alfonso X. ('El Sabio'), King of Castile and Leon (1224-1284), by 50 of the most celebrated astronomers of the time.

- 3848 **AUTOGRAPHS OF SCIENTISTS:—BABBAGE (Charles, F.R.S.) PASSAGES from the LIFE of a PHILOSOPHER, with frontispiece of the author's invention the 'Difference Engine (No. 1),' extended by the insertion of 88 Holograph Letters from well-known Scientists, etc., mentioned in the work (as under), many being addressed to Faraday, also interesting cuttings, etc., thick 8vo. hf. brown calf extra, uncut, t. e. g. (a most interesting volume), with fine etched bookplate of Frederick Hendriks, F.S.S., £9. 9s** 1864

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- 3852 **CEULEN [alias COLLEN] (Ludolph van ; Univ. Leyden) De CIRCULO et ADSRIPTIS Liber**, in quo plurimorum Polygonorum Latera per irrationalium Numerorum Griphos, quorum libet autem per Numeros absolutos secundum Algebraicarum Equationum Leges explicantur. Omnia Latina fecit, et Annotationibus illustravit WILLEBRORDUS SNELLIUS; with finely engraved portrait on title by Gheijn, and numerous diagrams, 4to. *old tree-calf, rebaked (title and some ll. wormed, otherwise a sound copy)*; RARE, £1. 10s *Lugduni Batavorum, Jodocus a Colster, 1619*

'Adrianus Romanus and Ludolph van Ceulen occupied themselves with approximating to the ratio between the circumference and the diameter [of the circle]. The former carried the value π to 15, the latter to 35, places. The value of π is therefore often named Ludolph's number. His performance was considered so extraordinary, that the numbers were cut on his tomb-stone in St. Peter's church-yard at Leyden.'—Prof. Cajori.

- 3853 **ELECTRICIAN (The)**: a WEEKLY JOURNAL of THEORETICAL and APPLIED ELECTRICITY, and CHEMICAL PHYSICS, COMPLETE from 1883 to 1917 (Vols. X—LXXIX), with numerous fine portraits, plates, and woodcuts, 70 vols. impl. 4to., vv. 10-11 in hf. calf, vv. 12-46 in cl., vv. 47-76 in hf. red roan, cl. sides (2 vv. in uniform hf. cl.), and vv. 77-9 in parts as issued (a fine set), £30. (p. £45. 10s nett unbound) 1883-1917

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Octavio Caleñ | Juñ. Lector. Vale. [1482]

'PREMIÈRE ÉDITION de cette version, et un des plus anciens livres imprimés où se trouvent des figures de mathématiques'—Brunet. In his dedication the printer says that the difficulty of printing geometrical designs had hitherto made it impossible to print geometrical books; but that this difficulty had been overcome so well by great painters, that 'qua facilitate litterarum elementa imprimuntur ea etiam geometricæ figure conficerentur'. The fine woodcut border surrounding p. 3 (which is contained in the above copy) is a well-known example in the history of book ornamentation.

THIS TRANSLATION is of great interest as having been made by an Englishman, ÆTHELHARD or ADLHARD of BATH, either from the Greek original, or, more probably, from an Arabic version. Æthelhard was a great traveller as well as one of the greatest philosophical writers of the Thirteenth Century, 'and seems to have passed through Spain, the North of Africa, Greece, and Asia Minor. He was one of those Englishmen who lived for a time in the Norman Kingdom of Sicily, and is known to have visited Syracuse and Salerno. That he knew Greek is almost certain; but it has not been determined whether the translation of Euclid (undoubtedly executed by him, though often ascribed to Campanus of Novara, with whose comments it was published at Venice in 1482, was made from an Arabic version or from the original' (Professor Adamson). On either supposition the instance of English mediæval scholarship is a striking one, and Æthelhard is one more disproof of the theory of the blank ignorance and obscurantism of the Middle Ages with which the youth of England is still regaled by the timberheaded textbook-writer of British popular Protestantism and journalistic State-Churchmanship.

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It contains at end a printed sheet of corrections by SIR G. B. AIRY, with MS. additions, apparently by himself.

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This very rare work is according to Prof. de Morgan a reprint of the author's translation of Valentijn Menheer van Kempen's work (published in 1596), with the text re-arranged and recast in dialogue form, but having, according to the author's preface, many original additions by him.

It is especially valuable for having at end two treatises on BOOK-KEEPING: The Journall or Dayes Booke marked with the Letter A (pp. 15), and The Leager or Booke of Debitor and Creditor, marked with the Letter A (pp. 30).

Both Prof. de Morgan and Mr. R. Brown ('History of Accounting'), who apparently had never seen a perfect copy of it, give the date as 1613. This is evidently a mistake, as the work is dedicated to Sir Thomas Smith, 'Trading the East-Indies and the Moscouie company, as also the Company of Discoverers of the North-West Passage, and Treasurer for the Plantation in VIRGINIA.' As he did not become treasurer of the Virginia Co. until 1620, and as moreover the two tracts on book-keeping begin the entries with Jan. 1st 1621, it may be reasonably inferred that the date is 1620.

The work, as mentioned before, is excessively rare, there being no copy in the British Museum, and none, save the above, has been sold at auction within the last 30 years. It was quite unknown to Lowndes, Watt, and Allibone, of whom the latter two only mention the author's name, but give only his Art of Navigation and Seaman's Kalender.

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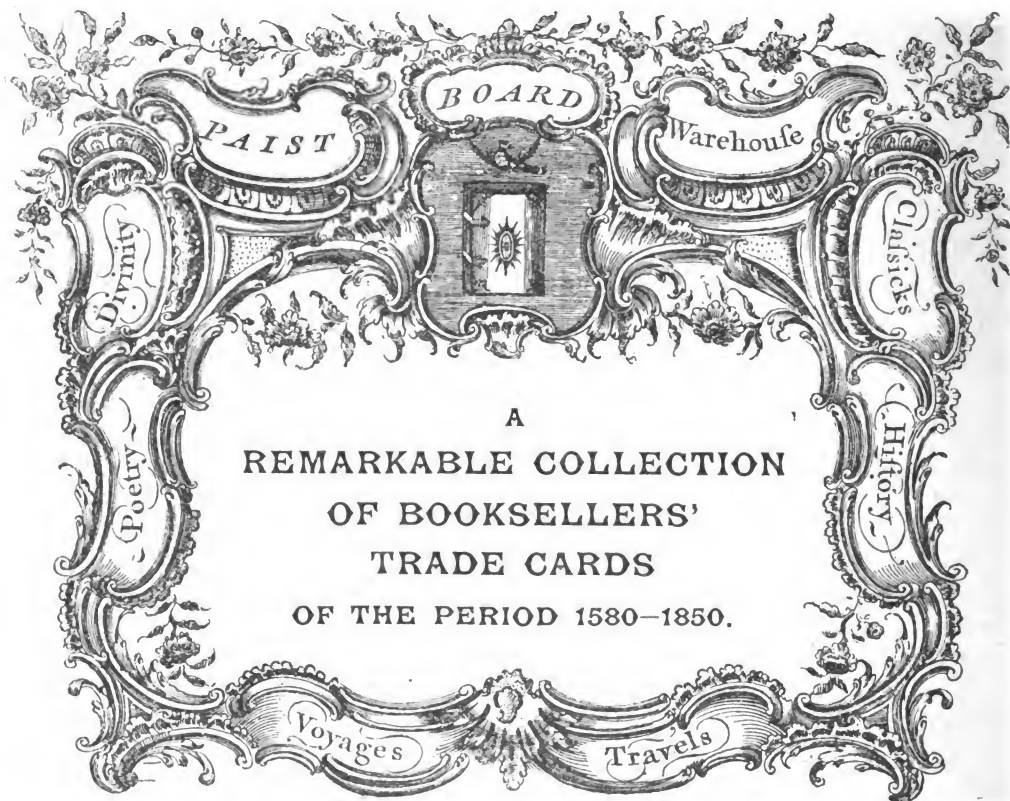
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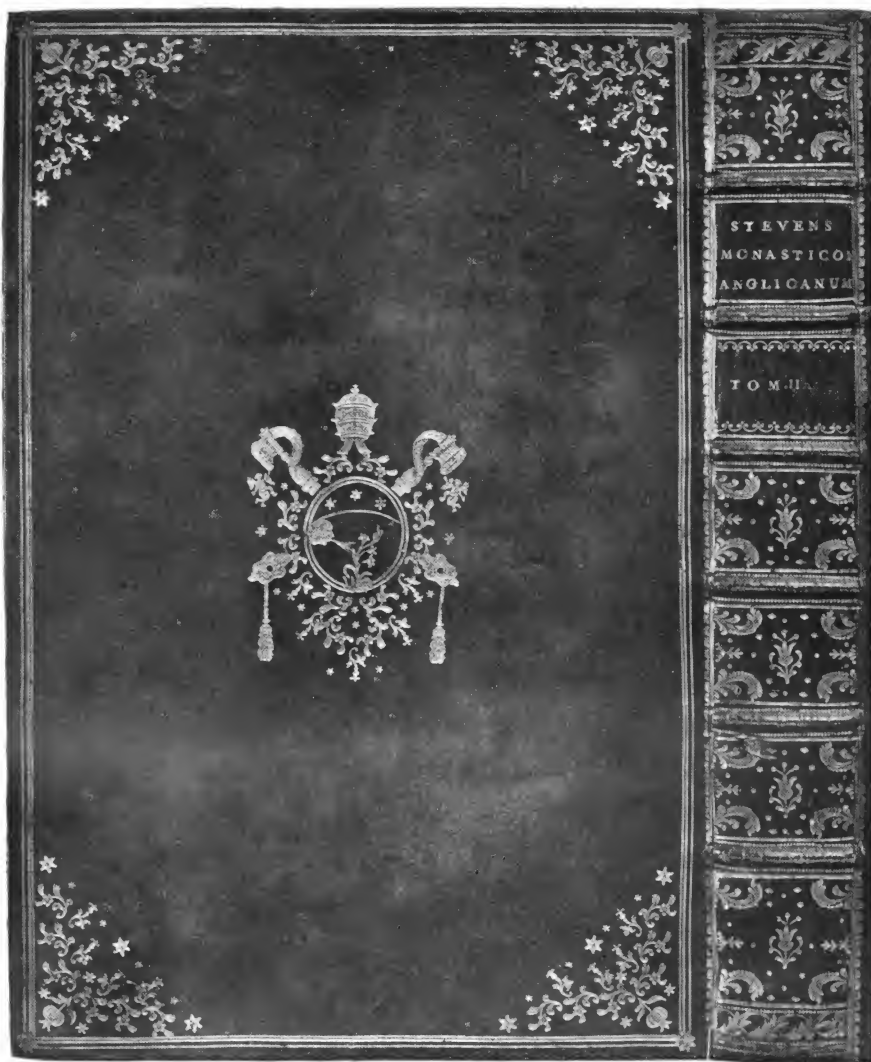
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'To Wilkie Collins.

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Their connexion is generally well known to most collectors, but the following *résumé* will possibly be of interest to some. Their association dated from 1851, which year marked an epoch in the career of Collins as a successful novelist: in 1852 he took part in the theatricals organized by Dickens at Tavistock House, and wrote for them 'The Lighthouse' and 'The Frozen Deep', the latter being included in a series of performances given for the benefit of Douglas Jerrold's family. They toured together at various times through Switzerland and Italy, Paris, and the North of England—the latter being partly described in 'A Lazy Tour of Two Idle Apprentices'. Collins contributed under Dickens's editorship to 'Household Words' and afterwards to 'All the Year Round', in which appeared his first great popular success 'The Woman in White'. He imitated Dickens by touring the United States and giving public readings, his short story 'The Frozen Deep' being the one generally chosen. He was very critical as to the 'Life' of his 'master', which he trenchantly calls 'The Life of John Forster, with occasional Anecdotes of Charles Dickens'. The 'much more' in the above letter doubtless refers to the several minor works in which Dickens and Collins collaborated, and to the pleasure derived from their associated tours. The following excerpt from D. N. B. emphasizes the mutual imaginative reaction at work between the two friends:

'The influence of Dickens is very clearly traceable in Collins's work, yet there is reason to believe that Collins had nearly as much influence upon the latest works of the great writer as Dickens had upon him. Dickens longed to shine as an elaborator of plots, while Collins, the past master of the plot, aspired to be a delineator of character and to produce didactic fiction and reformatory romance after the Dickensian model.'

It was while acting in Wilkie Collins's 'Frozen Deep' that Dickens first conceived the main idea of his 'Tale of Two Cities'.

Had Dickens and Collins worn the buskin instead of wielding the pen they would have been two of the best actors of their time.

This half red morocco binding was a style specially chosen by Dickens for such of his books as he presented to his most intimate friends—the 18 vols. which he gave to Mrs. WINTER (DORA), on the renewal of their friendship in 1855, each inscribed 'Charles Dickens—To Maria Winter, in affectionate remembrance of old times!' were bound in the same way, and passed through the advertisers' hands some few years ago.

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Dickens first met the Watsons at Lausanne in 1846, and the extent of his friendship may be gauged by the fact that he dedicated his most favourite book, 'David Copperfield', to them. He was a frequent visitor at their great Northamptonshire place, Rockingham Castle, certain features of which he reproduced in the Chesney Wold of 'Bleak House'. It was there that he first met Miss Mary Boyle, a cousin of Mrs. Watson, and an amateur Actress, both she and Georgina Hogarth taking part in the theatricals got up by Dickens, which were afterwards repeated publicly for charitable purposes. In a letter to Bulwer Lytton, Sept. 30th, 1850, Dickens described Miss Mary Boyle as 'the very best actress I ever saw off the stage, and immeasurably better than a great many I have ever seen on it.'

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The signature of Augustus is perhaps the rarest of all the Dickens family Autographs. He was the youngest and favourite brother of Charles Dickens, who playfully nicknamed him Moses after the character in the *Vicar of Wakefield*, this, facetiously spoken through the nose, became Bozes, was afterwards contracted to Boz, which Dickens immortalized by adapting it as his *nom de plume*. By reason of his subsequent career Augustus became a thorn in the side of Charles Dickens, who had to disown him as a brother.

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In another letter he writes, 'I hope now you know me better you will teach her [Mrs. Winter's child] one day, to tell her children, in time to come when they may have some interest in wondering about it, that I loved her mother with the most extraordinary earnestness when I was a boy.'

The book also contains the first complete literary production of Dickens (*hitherto quite unknown*) in the shape of a long AUTOBIOGRAPHICAL POEM, entitled THE BILL OF FARE; founded on Goldsmith's two Poems, Retaliation and the Haunch of Venison; this describes by name and personal characteristics all the members of 'Dora's' family circle, from which Mr. Stonehouse has been able to identify the originals of quite a number of the characters in 'Sketches by Boz', and other of Dickens's works.

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- 545 **BERNARDUS** (S.; *Abbas Clara-Vallensis*) LIBER MEDITATIONŪ; first edition with date (Hain, *283), gothic letter, painted initials [Basileæ, Joh. de Amerb. ch], 1492—**TAMBACO** (Johannes de) CONSOLATORIUM THEOLOGICUM; first edition, gothic letter, painted initials (Hain, *15237). [*ibid.*, apud eundem], 1492—**ZUTPHANIA** (Gerardus de) DE REFORMATIÖE VIRIUM ANIME; first edition with date gothic letter, painted initials, with large woodcut of Adam and Eve and the Serpent (in fine contemporary colouring), and initials painted in red and blue (Hain, *16291). [*ibid.*], 1492—3 vols. 12mo. in 1, original oaken boards, covered with hand-somely stamped leather, very neatly rebacked (in excellent preservation throughout); rare, £12. 12s *Basileæ, 1492*

Three interesting typographical specimens from the press of JOHANN VON AMERBACH, all in a splendid state of preservation, and with the initials painted in red and blue. There are a few neat contemporary MS. notes and (on flyleaf) an inscription 'MONASTERIUM ALTHOMINSTER, 1543'. On the last two pages (of flyleaf and end-paper) is a long quotation in a XVth Century hand from MEISTER ECKARDT, the mystic, in Middle High German.

'Parmi les grands imprimeurs bâlois, que Zwinger appelle typographici Heroes, nous devons citer JEAN DE AMERBACH, chef d'une famille illustre, qui porte presque à la perfection l'art de la typographie.'—Brunet.

EARLY PRINTED BOOKS FROM THE FAIRFAX MURRAY COLLECTION:

- 546 [BERKEN (Johann)] VITA Sanctoꝝ GERUASIJ et PROTHASIJ cuꝝ sermone et translatiōe Ad oppidum Brisach quorum ossa ibidem habentur; gothic letter, 36 lines to a page, with woodcut and coat-of-arms on title, and ornamental initials, sm. 4to. handsomely bound in sprinkled calf extra, tooled inside borders, g. e., by F. BEDFORD (a few headlines slightly shorn, otherwise a FINE COPY); rare, £5. 10s
Impressum Argētime p' Joh. Grüniger [sic], 1503

COLLATION:—A-B6 = 12 leaves, unnumbered.
Proctor, 9896.

- 547 BOETHIUS (Anicius Manlius Torquatus Severinus, 'the last of the Romans'): BOETIUS de DISCIPLINA SCHOLARIU, cū notabili Comēto; printed in gothic letter of two sizes, with large and fine woodcut on title, representing a professor with a cane lecturing to his students, sm. 4to. hf. polished dark green morocco (A VERY FINE AND CLEAN COPY), £3. 10s
[col. :] Colon [ic] impressus officina pie recordatōnis Henrici Quētell, 1501

COLLATION:—A-L6, unnumbered.

This edition is not in Proctor, and is a fine specimen of typography.

'Traité qu'on croit être l'ouvrage de THOMAS DE CONTIMPRÉ, bien qu'il ait paru sous le nom de Boèce.'—Brunet.

- 548 CICERO (Marcus Tullius): Des hochberümpften MARCI TULLII CICERONIS BÜCHLEIN vō dem ALTER, durch herr JOHAN NEUBER, Caplan zu Schwartzenberg vss dē latein in TEUTSCH gebracht; with title within fine woodcut border, and 5 large and fine woodcuts by HANS WEIDITZ, each occupying more than half the page, folio, hf. polished green morocco neat (tear in title neatly mended, otherwise A VERY FINE COPY); with a few contemporary MS. notes in German (very rare), £11. 11s
Augsburg, Sigismund Grym, 1522

PROBABLY THE FIRST EDITION OF THE FIRST GERMAN TRANSLATION OF THE DE SENECTUTE. It is not mentioned by and was evidently unknown to Brunet.

- 549 DIONYSIUS Alexandrinus: De SITU ORBIS, Opus studiosis necessarium, Græce scriptum. Idē in Latinitatē à RHEMNIO GRAMMATICO trāslatū, etc., falsd hactenus PRISCIANO adscriptum, in idem CÆLII CALCAGNINI Annotatiunculæ; printed in Greek and italic letter, with beautiful woodcut title by one of the HOLBEINS, ornamental initials, and large printer's device, 12mo. finely bound in polished crushed brown Levant morocco extra, tooled inside borders, g. e., by Lloyd (blank top of title neatly mended, otherwise a LARGE AND CHOICE COPY); rare, £8. 6s
Basileæ, apud Val. Curionem [Schaffner], 1522

COLLATION:—A-GS, H6 = 62 leaves, unnumbered.

- 550 DÜRER (Albrecht) LA PASSIONE di N. S. GIESV CHRISTO, sposta in ottava Rima da MAURITIO MORO, Canonico; with etched circular portrait of Dürer on title, and 37 full-page woodcuts, sm. 4to. old vellum (LARGE AND FINE COPY); RARE, £6. 15s Venetia, appresso Daniel Bissuccio, 1612

- 551 FENESTELLA (Lucius; sac.) De MAGISTRATIBUS SACERDOTIJSQ; ROMANORU Libellus, jam primum Nitōri restitutus. POMPONII LETII de Magistratibus et Sacerdotiis, et præterea de diversis Legibus Ro. Item VALERII PROBI de Literis Antiquorum Opusculum; italic letter, with title within a woodcut border after Holbein, 12mo. large and scond copy in boards, £1. 10s [c. 1530]

COLLATION:—A-L8 = 88 leaves, unnumbered.

'On sait que l'auteur, qui a pris le nom de Lucius Fenestella, est ANDREA DOMINICI FIOCCO, chanoine florentin, mort vers le milieu du XV^e siècle.'—Brunet.

- 552 FORTUNE-TELLING:—[PAMBST (Paul, Ord. Premonstratensium) LOOSBUCH, zu ehren der RÖMISCHEN, VNGERISCHEN vñnd BOHEMISCHEN KÜNIGIN; printed in gothic letter, with arms of Anne, Queen of Ferdinand I., on title, 115 woodcuts in the text, also cuts of various combinations of dice, and 2 full-page ones with VOLVELLES, many of the cuts being after HOLBEIN, others possibly by BEHAM, folio, old hf. calf (binding slightly damaged, also some ll. browned or slightly soiled, otherwise a SOUND AND TALL COPY); very rare, £16. 16s

[col. :] Getruckt zu Strassburg bey Balthassar Beck, 1546

A collection of rhymed Biblical stories intended for FORTUNE-TELLING, as popular among the pseudo-cultured then as now.

'Cet ouvrage est un livre des sorts. Les gravures sur bois sont très remarquables de composition. Elles sont d'un style allemand déjà épuré, et fortement influencé par les belles productions de Bâle.'—Didot's Catalogue raisonné.

— see ADDENDA.

- 553 HERALDRY:—SANTIAGO (Orden de): COPILACIÒ de los ESTABLECIMIENTOS de LA ORDEN de la CAVALLERIA de SANTIAGO del ESPADA [còpilado da JOHAN FERNANDEZ DE LA GAMA]; gothic letter, printed in red and black, with title in large xylographic letters, and numerous fine woodcut initials, 2 large devices of the Order in red, full-page cut of St. James on horseback, etc., folio, modern limp vellum, with ties (2 ll. in fs., several ll. mended and a few words made up, otherwise a LARGE AND FINE COPY), from the WILLIAM MORRIS COLLECTION, £16. 16s
Sevilla por Johanes Peynicer de Nurenberga, 1503

VERY RARE, and apparently unknown to bibliographers.

The printer of this book, Joh. Peynicer or Pegnitzer, was one of the 'Cuatro Alemanes Companeros,' who began printing in Seville in 1490. Pegnitzer was the last survivor of this Company, and the above seems to be the last book printed by him. After the publication of this in 1503 he disappears, and 'avec lui s'éteint le premier des grands ateliers de Séville, un des plus remarquables de toute l'Espagne' (HAEBLER, Typog. Ibérique du XV^e Siècle).

- 554 HUTTON (Ulrich von) AULA. Dialogus. Ad Lectorem. Res est noua Lector, res est incūda lusio perurbanus & facetus: dispeream nisi legisse voles. Vale. Cum Privilegio Imperiali; editio prima; title within broad woodcut border, dated MDXVII., by WEIDTZ (its first appearance), and large initial, sm. 4to. neatly bound in smooth olive morocco (slightly wormed), £6. 6s
[Augsburg,] In off. excus. Sig. Grimm Medici & Marci Vuyrsung, 1518, XVII. Sept.

THE FIRST EDITION. Proctor, 10852.

'Pamphlet sur la vie des courtisans, où il donnait suite à ces attaques contre les habitudes et les mœurs corrompues de la noblesse, attaques violentes qui devaient lui susciter des ennemis puissants.'—Biogr. Gén.

EARLY PRINTED BOOKS FROM THE FAIRFAX MURRAY COLLECTION :

- 555 **HERODOTUS**: HEREDITI Halicarnassei Historiographi LIBRI NOVEM, Musarum Nominibus inscripti, Interprete LAUREN[TIO] VAL[LA]; accesserunt IX Folia, iam primum a CONRADO HERESBACHIO à Graeco suis Locis sunt adjecta, etc. etc. Item de Genere Vitaque Homeri Libellus, iam primum ab eodem HERESBACHIO in Latinum conversus; *with title within FINE WOODCUT BORDER of four pieces representing in 13 compartments the Labours of Hercules, signed in top centre, i. e. ANTON WOENSAM VON WORMS, a fine woodcut border surrounding page 1, and large woodcut initials [by ALBRECHT DÜRER], folio, handsomely bound in hf. russia gilt (FINE COPY), £4. 10s*

[col.:] Coloniae apud Eucharium Ceruicornum, ære & impensa M. God. Hittorpij, 1528

- 556 **KALENDAR (Deutscher)**: Das ist der TEUTSCH KALENDER mit den FIGUREN; *printed in German gothic letter, 32 long lines to a page, with numerous circular and other woodcuts, and ornamental initials to Almanack (repeated), sm. 4to. finely bound in polished crimson Levant morocco extra, inlaid wreath on sides, tooled inside borders, g. e., by LORTIC (Didot's copy); an unusually choice and tall copy (very rare), £30.*

[col.:] Getruckt zu Augspurg in der Kayserlichen stat von Hannsen Froschauer, 1522

COLLATION:—a-f8, g6, h4=58 leaves, unnumbered. One or two leaves misplaced.

A remarkable storehouse of popular sayings and superstitions in connexion with the Seasons, many of them rhymed, and also containing an astrological explanation of the planets and the constellations of the Zodiac, latro-astrological and popular health rules, charts to find Sundays, Christmas Day, and the phases of the Moon, an anatomical human figure—in fact everything that at that time would have been considered popular science.

The above is a remarkably well-preserved copy of a work which is probably now only existing (as a result of constant thumbing) in very few copies in a poor and imperfect condition.

* Plusieurs de ces calendriers allemands imprimés dans le XVI^e siècle, et notamment l'édition d'Augspurg [sic] gedruht [sic] von Hannsen Froschauer, 1522, in-4 de 58 ff.—Brunet.

- 557 **LIBRO (II) del PERCHÉ**: la Pastorella del Marino, la Novella dell' Angelo Gabriello, e la Puttana Errante di PIETRO ARETINO; *with finely engraved title, 12mo. finely bound in crushed red Levant morocco extra, g. e., by Closs (VERY FINE AND TALL COPY), £2. 2s*

à Pe-king, regnante Kien-long, nel xviii^o Secolo [Londra, 1784]

* Le Libro del Perchè est une imitation en vers d'une partie de La Cazzaria, ouvrage fort licencieux d'Ant. Vignale de Buonagiunta. C'est un recueil plus que gaillard.—Brunet.

Only 200 copies were printed in London of this edition, for G. Molini the Paris bookseller, for the delectation of the aristocratic decadents of the eve of the French Revolution.

- 558 **LUTHER (Martin, pr., Augustinian)**: ACHT SERMON. D. M. LUTHERS von jm geprediget zu WITTEMBERG in der fasteu. Darinn kurtzlich begryffen, vö den MESSEN, BYLDNUSSEN, CAYDERLAY GESTALT des SACRAMENTS, von dē SPEYSEN uñ HAIMLICHEN BEICHT etc.; *printed in gothic letter, 35 long lines to a page, with title within fine ornamental border, ascribed to HANS WEIDITZ, sm. 4to. hf. cl. (VERY LARGE AND FINE COPY), £2. 15s*

Wittenberg [? Zwickau, ? Jörg Gastel], 1523

COLLATION:—A-D4=16 leaves, unnumbered.

Wittenberg with its plague-camp of abandoned starved and dying prisoners will now be the shame of the German people as long as history lasts. Had Luther foreseen it he might possibly have had doubts of his great religious principle of Prince-worship.

- 559 **DECEM PRAECEPTA VUITTENBERGENSI praedicata POPULO**, per P. MARTINUM LUTHER Augustinianū; *printed in small roman letter, 42 lines to a page, title partly in red, with woodcut of the Rood beneath, and fine ornamental woodcut border having the Saxon and Leipzig arms at foot, full-page woodcut of Moses with the Tables of the Law on verso, and printer's device at end, sm. 4to. boards (A REMARKABLY FRESH AND VERY TALL COPY, NEARLY UNCUT), £3. 10s*

[col.:] Lipsiae ex Aedibus Valentini Schuman, 1519

COLLATION:—AB6, C4, DE6, F4, G6, H4, 16, K4=52 leaves.

These sermons were preached while Luther was still a Catholic reformer.

- 560 **De DÜDESCHÉ CATECHISMUS**; *printed in small gothic letter, 30 lines to a page, with title in red and black within woodcut border, and 18 fine full-page and 2 smaller woodcuts (wanting 8 leaves), Wittenberch, G. Rhaw, 1531—GRETZINGER (Benedictus) HEUBTARTIKEL und FÜRNMSTE STÜCK unsers CHRISTENTHUMS, mit Sprüchē aus der heiligen Schrift beweret, zum andern mal vbersehen; gothic letter, title within border by HANS CRANACH, ibidem, J. Clug [b. 1535]—2 vols. 12mo. in 1, finely bound in polished crushed red Levant morocco extra, g. e., by W. PRATT; with old woodcut pasted inside cover; A FINE AND CLEAN COPY (very rare), £6. 6s*

1531 [-c. 1535]

First edition of the Low German version of Luther's great catechism, or *Deutscher Catechismus* (first published in 1529), which was unknown to Brunet. Apart from its artistic and typographical interest, the work is also of considerable philological importance—to say nothing of its author's sinister significance as the father of German prince-worship, now reduced to a horrible absurdity in the State Church *larpeia* of William the Witless.

WILLIAM MORRIS'S COPY :

- 561 **MAXIMUS Tyrius, Philosophus Platonius**: SERMONES à Graeca in Latinam Linguam versi, COSMO PACCIO Interprete; *printed in large type, with fine signed woodcut border to title by AMBROSE HOLBEIN, two other woodcut borders by the same and HANS HOLBEIN, and ornamental headpieces and initials, folio, handsomely bound in hf. russia (corners of a number of ll. neatly repaired, otherwise a FINE COPY), £3. 15s*

Basilee, Joannes Frobenius, 1519

The Second Edition in Latin, not mentioned by Brunet. It is remarkable for its fine illustrations. The first Latin edition appeared in Rome in 1517, without the above illustrations. The above was WILLIAM MORRIS'S copy.

- 562 **PETRARCA**: EXEMPLUM PRIVILEGI LAURAE APOLLINARIS FRANCISCI PETRARCHAE, qua insignis Poeta Romae, in Capitolio An. M. CCC. XLI. v. Id Apr. honorifice donatus est, 16mo. (ff. 4), *finely bound in crushed green Levant morocco, tooled inside borders, g. e., by Lloyd, £1. 10s*

Venetis, 1531

EARLY PRINTED BOOKS FROM THE FAIRFAX MURRAY COLLECTION :

- 563 **MOLITOR** (Ulrich) De LAMIIS et PHITONICIS [sic] MULIERIBUS Teutonice VNHolden vel HEXEN ; ? editio princeps ; printed in gothic letter, 34-35 lines to a page, with 7 curious full-page woodcuts, sm. 4to. parchment (one woodcut of an amatory character slightly inked, otherwise a LARGE AND FINE COPY) ; very rare, £15. 15s [Reutlingen, Joh. Otmar, c. 1489]

COLLATION : a-b8, c-6, and d5=27 leaves, unnumbered ; b1 marked cl.
 'Édition très-recherchée des bibliographes. . . Sur la demande de l'archiduc d'Autriche Sigismund, qui avait déjà plusieurs fois réclamé son conseil, il composa vers 1485 un traité complet sur les sortilèges et la procédure à suivre pour les punir. Cet ouvrage curieux, résumé des idées de l'époque au sujet de la sorcellerie, a pour titre : *De Lamiis et phytonicis Mulieribus*.—*Biogr. Gén.*

- 564 **ORNAMENTATION** : [VAUQUER (Jean, orfèvre de Blois)] LIURE de FLEURS propre pour Orfèvres et Graueurs ; PROOF IMPRESSIONS of the beautiful engraved title and 8 charming plates of ornamental designs of goldsmith's work, sm. 4to. hf. morocco (very rare), £18. 18s

chez de Poitivy [c. 1700]
 One of the most charming works of ornamental designs in goldsmiths' work, all of which are now getting increasingly rare.

- 565 **REGIMEN SANITATIS** : Dass ist das REGIMENT der GESUNTHEYT durch all MONAT des GANTZEN IARS wie man sich halten sol mit essen vn trincken. vnd auch von lassen, 7c. ; printed in German gothic letter, 31 lines to a page, with woodcut on title of St. Gregory teaching two boys, sm. 4to. hf. maroon morocco neat, £5. 15s

impressum Auguste per Iohannnea [sic] Froschauer, 1502
 A rare edition of this curious work, unknown to Proctor and Brunet.

COLLATION : -a-6, b-1 (last leaf, seemingly blank, missing)=9 leaves.
 'Ouvrage de diététique composé pour le Comte Rodolphe de Hohenburg, et qu'il ne faut pas confondre avec la *Schola salernitana*, livre qui a souvent paru sous le même titre que celui-ci.—Brunet.

- 566 **REGIOMONTANUS** (Johannes, vere JOHANN MÜLLER) : EPTOMA JOANIS DE MÔTE REGIO in ALMAGESTÂ PTOLOMEI ; gothic letter, with title in large xylographic letters, large full-page cut with border on verso of a3, large and beautiful ornamental initials, and numerous marginal geometrical diagrams, folio, finely bound in crushed olive Levant morocco, tooled inside borders, uncut, t. e. g., by Leighton (A VERY FINE AND PRACTICALLY UNCUT COPY) ; very rare, £17. 10s

Venetii, Johann Hamman, Aug. 31, 1496

Hain, 13806. Proctor, 5197.

FIRST EDITION of the first work, his epitome of the Almagest, of Regiomontanus, who was helped in writing it by his teacher PEUERBACH. The work may be said to have ushered in the revived science of astronomy that had been practically dormant in Europe since Ptolemy, save for Arab science in Spain.

The work is also mathematically important for having introduced the trigonometrical symbols of *sine* and *cosine*.

- 567 **ROMBERCH** (Joannes, de Kyrsepe) CONGESTORIUM ARTIFICIOSE MEMORIE, omnium de Memoria Preceptiones aggregatim completens ; gothic letter, with numerous full-page and other woodcuts, 12mo. contemporary vellum (part of cover torn off and missing), £4. 4s

[col. :] Venetiis, in edibus Geo. de Rusconibus, 1520

The first edition, and VERY RARE. Brunet only knew that of 1533, which he terms 'peu commun'. It might be compared with the system of memory-mending being so energetically pushed at the present time.

- 568 **ROME** (THE SACK OF) :—Eyn SENDBRIEFF so eyner seinem bruder von VENEDIG heraus geschickt hat, darynn begriffen, wie es zu ROM newlichen ergangen ist. M.D.xxvij. ; gothic letter, with fine woodcut of Soldatesca before Rome on title, sm. 4to. (pp. 6), hf. citron morocco neat (blank top of title neatly mended, with stamp of CARLO MARSTALLER, otherwise in FINE CONDITION) ; very rare, £4. 4s

o. O. [c. 1528]

An interesting if revolting account of the sacking of Rome on May 4th, 1527, by the Imperial troops under the DUKE OF BOURBON and GEORGE OF BRUNDSBERG (the father of the German Landsknecht!).

'Den barfüsser Cardinal Arszelli genannt haben sie lebendig geschunden, und habß sonst eine grosse menig volcks erschlagen. Auch alle kranken ym spital zum heyligß geyst vnd yhre pfleger, Dergleichen all münch, pfaffen vnd nonnen ynn yrß hewsern, Der Cardinel, bischoff, prelaten vnd clöster diener niemandt lebendig gelassen, Sie haben all Vrsiner vnd yhre anhangen mit weib vnd kindern erschlagen, darzu yre diener, und yhre hewser nider geschlagen und zerissen, vnd ein salzam spyl mit den gemeynen weybern getriben.'—*Obverse of sign. Aiiij.*

- 569 **SAGES** (THE SEVEN) :—PONTIANUS DICTA aut FACTA SEPTEM SAPIENTUM, miro quodam artificio in se completens ; cum parabolis ac similitudinibus, haud spernendis, que lectorem mediocriter eruditum oblectabüt ; printed in gothic letter, 37 lines to a page, title in 8 lines, with beautiful full-page woodcut on verso, representing Pontianus at his wife's deathbed, their son (the hero of the story) in the foreground, and 27 remarkably well-executed smaller woodcuts, sm. 4to. finely bound in polished crushed crimson Levant morocco, tooled inside borders, t. e. g. (VERY FINE COPY) ; very rare, £13. 13s

[col. :] Finis Argentine [Strasbourg], s. t. n.

[sed ? Gruninger or Hüpfuff], 1512

COLLATION : —A4, B8, CD4, E8, FG4, H6, I4 = 46 leaves, not numbered.

'On suppose que ce roman a été traduit ou plutôt imité des Parables de SANDABAR, ouvrage hebreu, lequel est lui-même tiré de la version arabe d'un ouvrage originalement composé dans l'Inde. Le texte latin a été écrit au commencement du XII^e siècle par DOM JEHANS, moine de l'abbaye de Haute-Selve.'—Brunet.

The above edition was unknown to Brunet and Proctor, and is remarkable for the fine woodcuts which it contains.

- 570 **SCHEURL** (Christoph) EPISTOLA ad CHARITATEM [PIRKHEIMER], Abatissam Sanctæ Claræ, de LAUDIBUS FAMILIÆ PYRCKHEIMER, etc. etc. UTILITATES MISSÆ . . . EPISTOLE Reuerende Matris CHARITATIS PIRCKHEIMERIA Abbatissa Sanctæ Claræ ; with large and beautiful full-page woodcut (? by ALBRECHT DÜRER), on verso of title, containing portrait (? of the author) kneeling, with St. Christopher and the Holy Child (repeated at end), sm. 4to. finely bound in hf. crushed brown Levant morocco, g. e. (slightly wormed, otherwise in FINE CONDITION) ; rare, £6. 6s

[col. :] Nurnbergi. Fredericus [sic] Prymus, 1515

An interesting memorial of WILIBALD PIRCKHEIMER, the celebrated humanist and friend of Erasmus and Dürer, and of his accomplished sister CHARITAS, who knew Greek and wrote Latin with much elegance.

EARLY PRINTED BOOKS FROM THE FAIRFAX MURRAY COLLECTION:

- 571 **SAGREDO** (Diego de) **RAISON D'ARCHITECTURE ANTIQUE**, extraite de **VITRUE** et autres anciens Architecteurs, nouvellemēt traduite Despaingol a l'utlité de ceulx qui se delectent ez Edifices; *prettily printed in italics, with title within architectural desogn, and numerous fine woodcuts of ornaments, etc., sm. 4to. finely bound in blue crushed Levant morocco extra, g. e., by Lloyd (VERY FINE COPY), £8. 10s* Simon de Colines, 1542
- 572 **SAVONAROLA** (Girolamo, O.P.): **CONFESSIONALE** p Instructiōe Cōfessoē **REUERDI** PATRIS FRATRIS **HIERONYMI SAUONAROLE** de Ferrara: Ordinis Predicatorum; gothic letter, with woodcut on title of (?) the author writing, 12mo. ORIGINAL STAMPED CALF (FINE COPY); very rare, £8. 15s Venetiis, per Lazarum Soardum, 1507
- 573 ——— **DIALOGUS** inter **SPIRITŪ** & **Aniam** nūc primū in **Lucē** prodiens, cuius **Titulus** (**Solatiū** **Itineris** mei); with woodcut on title, 12mo. wrapper (RARE), £3. 3s Genuae, 1536
- 574 ——— **Le PREDICHE** sopra li **SALMI**, e molte altre notabilissime Materie, a qualunque Predicatore dil Verbo diuino utilisime, nuouamente riuiste; with vignette on title, and fine full-page woodcut portrait, 12mo. finely bound in crushed brown Levant morocco, g. e. (rare), £5. 5s Venetia, per Bernardino de Viano, 1543
- 575 ——— **SERMONES** Reueren. P. FRATRIS **HIERONYMI SAUONAROLE** in **Aduentu** Domini super **Archā** **Noe**, nusquam antehac impressi; gothic letter, with woodcut of **Phoenix** on title, ornamental initials, and printer's device at end, 12mo. old vellum (LARGE COPY WITH SOME LEAVES UNCUT); rare, £4. 10s [col.:] Venetiis, B. Stagninus, 1536
- 576 ———: FRATRIS **HIERONYMI** de **FERRARA** **TRIUMPHUS** **CRUCIS** de **VERITATE** **FIDEI**, folio, old hf. vellum, morocco label (a few slight wormholes on blank margin, otherwise a FINE AND VERY LARGE COPY); with a few contemporary notes (very rare), £7. 7s absque ulla nota
- 'Édition imprimée avec les caractères ronds d'Ant. Miscominus, à Florence, vers la fin du XV^e siècle. Cet ouvrage est regardé comme un bon abrégé de la philosophie catholique, et le succès qu'il a obtenu dans sa nouveauté s'est soutenu jusqu'à ce jour. L'édition que nous venons de décrire est la plus ancienne connue.'—Brunet.*
- 577 **SHEPHERD'S CALENDAR**: **COMPOTUS** **METRICUS** **Magistri** **AMIANI** cum **Commento**; with woodcut diagrams (one added in a contemporary hand), sm. 4to. finely bound in smooth crimson morocco extra, gold borders, g. e., by Ridge of Grantham, with the **SYSTON PARK** bookplate bottom margin off. f. 8 cut off and mended, otherwise A FINE AND LARGE COPY; very rare, £14. 10s absque ulla nota [15—]
- A very rare edition, unknown to Panzer, Brunet, Hain, Proctor, or Copinger. It is very handsomely printed in 'lettres bâtarde', 28 lines to a page, and consists of signatures a—e in eights and f in 9, or 49 leaves.*
- 578 **TUNDALE**, The **VISIONS** of: [Fol. 2:] **Incipit** **LIBELLUS** de **RAPTU** **ANIME** **TUNDALI** et eius **VISIONE** tractans de **PENIS** **INFERNI** et **GAUDIIS** **PARADISI**; printed in semi-gothic letter, 29-32 lines to a page, with 21 very curious woodcuts, chiefly of realistic examples of the torments of Hell, sm. 4to. finely bound in polished crushed olive Levant morocco extra, tooled inside borders, g. e., by Lloyd (very fine and large copy); very rare, £22. 10s [Spier, Joh. & Con. Hist., c. 1483]
- PROBABLY THE FIRST EDITION IN LATIN of these favourite visions of the late Middle Ages. Hain, *15540; Proctor 2410. COLLATION:—30 leaves, without marks (first and last leaves blank, the latter missing). Édition peu commune, imprimée avec les caractères de Reysier, à Eistadt, vers 1475, et ornée de figures sur bois très-singulières. Les Visions de Tondal sont un livre dans le genre du Purgatoire de Saint Patrice. Brunet.*
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Matthew Boulton made coins for Great Britain, and other countries, and supplied the new Mint with its machinery.

——— see WATT, post.

- 686 [**CHRISTIAN** (Sir Hugh Cloberry, R.N., *Commander-in-Chief at the Cape*)] OFFICIAL COPY OF LETTER, 5½ pp. 4to., dated Cape of Good Hope, Sept. [10], 1798, to the EARL of MORNINGTON, respecting NAPOLEON'S PROJECTED INVASION OF INDIA, £4. 10s

'... Blankett will I hope have reached his station, before this can reach you; and the Albatross has been detached from hence, to strengthen his Force off Babelmandel—in these strange and eventful times everything seems possible—yet I must acknowledge that I have strong doubts of Buonaparte's being able, with all his zeal, and all the enthusiasm of his followers, to accomplish so gigantic an enterprise, and I as earnestly hope that Nelson will have caught him upon his outset, and thereby spare you all the anxiety and trouble which must otherwise be heaped upon you'.

- 687 **JOHNSON** (Samuel, LL.D.) A.L.S., 1½ pp. 4to., Lichfield, June 22, to MRS. THRALE, 1771, £7. 7s

After giving the names of four ladies he has seen at Lichfield, Dr. Johnson proceeds: 'In all this there is nothing very memorable, but *sands form the mountain*. I hope to hear from Streatham of a greater event, that a new being is born that shall in time write such letters as this, and that another being is safe that she may continue to write such.'

- 688 ——— A.L.S., 1½ pp. 4to., Lichfield, Dec. 3, 1772, TO THE SAME, £7. 7s

'Do not be depressed. Scarce years will not last for ever; there will sometimes be good harvests. . . .

My love to all
Both great and small.

These verses I made myself, though perhaps they have been made by others before me.'

DR. JOHNSON ON THE STRATEGY OF THE WAR OF AMERICAN INDEPENDENCE:

- 689 ——— A.L.S., 2½ pp. 4to., August 1, 1775, TO THE SAME, A LETTER OF REMARKABLE INTEREST RESPECTING THE American Army ON THE EVE OF INDEPENDENCE, £55.

'America now fills every mouth and some heads, and a little of it shall come into my letter. I do not much like the news. Our troops have indeed the superiority; five-and-twenty hundred have driven five thousand from their intrenchment: but the Americans fought skillfully; had coolness enough in the battle to carry off their men; and seem to have retreated orderly, for they were not pursued. They want nothing but confidence in their leaders and familiarity with danger. Our business is to pursue their main army, and disperse it by a decisive battle, and then waste the country till they sue for peace. If we make war by parties and detachments, dislodge them from one place, and exclude them from another, we shall by a local, gradual, and ineffectual war, teach them our own knowledge, harden their obstinacy, and strengthen their confidence, and at last come to fight on equal terms of skill and bravery, without equal numbers.'

AUTOGRAPH LETTERS:

A REMARKABLE COLLECTION

of interesting and important Autograph Letters,
Marginalia, etc., mostly unpublished, by

SAMUEL TAYLOR COLERIDGE,

as described below, offered for sale in one lot for £175.

If not sold within a month after the posting of this Catalogue, the items will be disposed of separately at the prices quoted herein; orders for the separate items will in that case be dealt with in rotation as received.

- 691 **COLERIDGE (Samuel Taylor)** Important Series of TWENTY-FIVE A.L.L.S., 47 pp. 4to. and 10 pp. 8vo., mostly dated from The Grove, Highgate [Mr. James Gillman's], June 1st, 1822, to February 11th, 1832, to MR. or MRS. CHARLES ADERS, *the latter the beautiful and accomplished daughter of Raphael Smith, the engraver, Euston Square, and Laurence Pountney Lane, City, long, closely-written letters of very intimate character, full of discussions on ETHICS, METAPHYSICS, LITERATURE, RELIGION, etc., mentioning CHARLES LAMB, ROBERT SOUTHY, EDWARD IRVING, DORA WORDSWORTH, etc., but most remarkable for their constant allusions to a young lady by whom the poet seems to have been attracted at that time; her name, which happens very often in connexion with affectionate messages, has been carefully deleted quite a long time ago, possibly soon after the letters were received, but by careful scrutiny and comparison of the deletions can be seen to have been ELLEN KELLY; in one letter COLERIDGE writes 'her face is like a Corelli Concerto (the VIIIth) a silent music,' he also several times expresses a wish that the ADERS should come to live with the GILLMANS, and bring the lady with them, £105.*

The following are a few brief Extracts:—

'It is a maxim with me, to make Life as continuous as possible, by linking on the Present to the Past. . . . The Present is a phantom known only by its pining, if it do not breathe the vital air of the Future; and what is the Future, but the Image of the Past projected on the mist of the Unknown, and seen with a glory round its head. But where shall we find the Eternal, which gives the Three in One, and makes all exist in each? It is Love—Love that like Flame can pass successively, from this to this, ever the same essentially, and yet taking up into its character the nature of the object on which it finds its sustenance. I of course am a stranger to your dear now spiritual Mother; but as by the beauty of a Daughter we may form an idea of the beauty (and there is an almost *divine* Beauty) of Age that formed the shrine of holy love in the Present, so by Mrs. Aders' Countenance, Tones, and Movements can I interpret what your Mother must have been—for no man can truly love diversely or *diverse* objects.'

'Mr. Green like myself is half German—and in the best sense, *all* German.'

'If Mr. R. could give me *time*, unused as for so many many years I have been to versifying of any kind, and dried up as, I fear, my poetic spring will be found by the severities of austere Metaphysics, I will attempt it [some translation] for him.'

'To be with one for any continuance and in any bond of sympathy, and not to feel attached to Germans, and to prize the intellectual growth of Protestant Germany, is scarcely possible.'

'I am resolved to tell Miss [Kelly], as soon as ever the Rose makes its appearance on her cheeks, that she deserves to have a gray haired Poet's kiss inflicted on her for the gloom, her sad naughty sore throat has thrown over our anticipations. . . . Be assured dear Madam! that if there be any medical efficacy in fervent and affectionate Wishing, your dear [child? *this word deleted*] will not long remain on a sick bed.'

'Mr. Green . . . is among the very best men I know. But probably you may have heard Mr. Robinson (that Pine-apple of a Crab, as Charles Lamb says) speak of him.'

'Give my love to Miss [Kelly, *this word deleted*] and tell her that spite of absence and dreary weather she buds and blossoms on the Green-house of my fairest Recollections.'

'Tell [dear Ellen, *these words deleted*], that I do not forget her—because I never forget her or can, she being one of the letters in the name written on the inward tablet.'

'My dear Friend, and (by the privilege of silvery locks and heart pure as burnished silver, in defiance of Beauty and Genius I dare add, beloved Sister!) [Then follows a very long letter, to Mrs. Aders, 4 pp. 4to. relating to three copies of a portrait of himself by Madame von Predl.]

Another long letter is written in the form of an 'EXTRACT FROM THE DOMESTIC AND LITERARY INTELLIGENCER, No. I, OCTOBER 12TH, 1825': the supposed extract being a pretended press puff of 'THE INVITATION, an epic Drama, in the style of Homer and Shakespeare. Finer models the Authors could not have selected'; this is followed by a Synopsis of a Scene on the 'East Cliff of Ramsgate,' in which the writer and his friends figure as Estecy [his pet pun on his own initials], Philophilé, Venus and Hygeia, the latter 'enters a flying Machine and mounts aloft.' The whole forms a very remarkable Fantasia. At the end is a Letter by MR. GILLMAN stating that 'writing and talking what he calls nonsense, is an infallible symptom, that our dear Friend is in good spirits and in his bettermost health.'

'In this bleak World of mutabilities where what is not changed, is chilled, and in this winter-time of my own Being, I resemble a Bottle of Brandy in Spitzbergen—a Dram of Alcoholic Fire in the centre of a cake of Ice.'

'I have long had it in my wish and imagination to attempt the founding of a Teutonic Club, that should be connected with the gradual purchase of a permanent German Library in London.'

'He [Mr. Watson] loves Germany & Germans—dislikes the Italians, and ABHORS the French—all as a good man ought to do—just as I would have had it.'

'From Mr. Reynolds I have heard—that my two Poems, the first for an engraving, and entitled 'Boccaccio's Garden', and the other, a wild and somewhat long Ballad, are all they can print this year, owing to the disproportionate length of Sir W. Scott's Prose (that was to have been a Canongate Tale, had not Mr. Heath *outbid*)'.

'I should like to suggest to some of his [Ackermann's] able artists what seems to me no bad subject for a Caricature—viz. The REFORM BILL, allegorized as a Loco-motive Steam-Engine, with all its smoke and fury, and by a long train of waggons, carts, etc., dragged on by it, one or two large caravans containing the ministerial Majorities, etc. . . . each of the waggons should represent some one of our dead weights, and dead blunders of the present Ministry—Belgium, Holland, Portugal. Irish Tythes . . . with the Steam Engine run *mad*, over hedge & ditch.'

AUTOGRAPH LETTERS:

- 693 **COLERIDGE (Samuel Taylor)** HOLOGRAPH MS., of an UNPUBLISHED POEM. 'ON QUITTING OXFORD STREET, BRISTOL, FOR NETHER STOWEY, NEW YEAR'S DAY, 1795, WITH MRS. C. AND HARTLEY, THEN AN INFANT, ADDRESSED TO MR. MAURICE OUR MEDICAL FRIEND, AT WHOSE HOUSE WE HAD PASSED THE PRECEDING EVENING, AND SENT OFF FROM CROSS, ABOUT 19 MILES FROM BRISTOL'; a Poem of 7 Verses, and Verses 1-3 of 'PART THE SECOND: SENT BY THE POST THE SAME EVENING FROM BRIDGWATER'—at the foot of which Coleridge has written, '*I have laboured in vain to recollect the remaining 7 or 8 Stanzas, 4 pp. 4to., watermarked 1828, £10. 10s*

* * * * *

'My first-born! my bright-eyed, with three-cornered mouth,
Thee the winds for a while their own murmours may teach
Till the Cuckoo and Nightingale come from the South
They shall set thee, my Babe, thy first Lesson in Speech!'

The verses previous to this very pleasing one are of a humorous and somewhat coarse description.

- 694 ——— HOLOGRAPH POEMS, 4 pp. 4to., Sept. 30th, 1829, addressed on p. 4 to MRS. ADERS;—'A SOMNOLENT EXTEMPORE, EYES HALF CLOSED AND HEAD NODDING TIME TO AN AMERICAN LADY'; signed EETHSE; *published under the title of 'TO BABY BATES [for whose identity see No. 702], £18. 18s*

* * * * *

'You came from o'er the Waters,
From Famed Columbia's land;
And you have Sons and Daughters
And Money to command.

* * * * *

But we are all the Children
Of one great Lord of Love;
Whose Mercy, like a Mill-drain
Runs over from above.'

* * *

THE TENDER CORN,
published under the title of 'SENTIMENTAL.'

'The Rose that blushes like the morn
Bedecks the valleys low,
And so dost thou, O tender Corn,
My Angelina's Toe.'

AND THREE OTHER SHORT UNPUBLISHED POEMS: LOVER'S REVERIE; and THE YOUNG TANNER; and some Prose Remarks respecting the same, ending, '*O that the Songs and Songlets here collected were but set to Charming Music by some modern Haydn—I might then exclaim!*

'Blest be the man that set these Lays!
He claims our thanks as well as praise!
Since had it not been for the Music
The Words had made both me and you sick.'—S. T. COLERIDGE.

Coleridge used the same punning signature on his initials in the several drafts that exist of his own Epitaph.

- 695 ——— ORIGINAL HOLOGRAPH MS. of the following UNPUBLISHED EPITAPH, 1 p. 4to., watermarked 1828, £8. 8s

'Here lies our Black Cat!—
Caught many a Rat;
Till—sad Exchange!
He caught the Mange:
And, no Cure found,
In a Water-Tub
We drown'd, drown'd, drown'd,
Drown'd, drown'd, drown'd,
Drown'd, drown'd—drown'd
DON BELZEBUB!!'

Also a long 'NOTE BENE!' on same. 'The following Epitaph comprises all the points of perfection, which Dr. Johnson—for I scorn such vulgar authorities as those of Harry Stottle, Long High-Nose, and Squint-ill Young, commonly called Squintillion—requires in this lapidary department of the Muses'—etc.

- 696 ——— ORIGINAL HOLOGRAPH MS. on GOETHE, 1 p. 8vo., £4. 10s

'What more aggrieves me in the greater part of Goethe's Compositions is the *Irrememberable*. The sorrows of Werther, the Mignon of old Harper of his Wilhelm-Meister, his Gorz von Berlichingen, and his Faustus, with many others, all are such glaring exceptions, that they might seem to justify the direct contrary'—etc.

- 697 ——— ORIGINAL HOLOGRAPH NOTE on SCHLEIERMACHER'S SERMONS, 2 pp. 8vo., signed, and dated Jan. 23rd, 1826, with a P.S. mentioning CHARLES LAMB, £8. 8s

'You will think it worth my noticing that in a little blank verse Poem addressed by me to Charles Lamb on his Sister's Illness in my 23rd year I had expressed the same sentiments as Schleiermacher in the conclusion of his 2nd Sermon, and in my 24th year had already publicly recanted and renounced them in a Note to the Poem in the first edition of my Juvenile Poems!'—etc.

- 698 ——— 'TO ELIZA, IN PAIN'; ORIGINAL HOLOGRAPH MS. of an unpublished Poem, of 12 Verses, 3 pp. 4to., signed, and dated June 3rd, 1826, addressed to MRS. ADERS, the subject of the poem, and enclosed in one of the above-mentioned letters of the same date, £12. 12s

* * * * *

'Twas my last waking thought—how can it be.
That thou, sweet Friend! such anguish should'st endure?
And hence the apish Dwarf, I dreamt to see,
Who told the cause and mock'd me with the cure —

* * *

AUTOGRAPH LETTERS:

700 **COLERIDGE (Samuel Taylor)** THE CONSTITUENT ENDS OF MARRIAGE ACCORDING TO MARTIN LUTHER, ORIGINAL HOLOGRAPH MS., 2 pp. 4to., signed, £3. 10s

701 — COPIES made (chiefly by MRS. ADERS) of MARGINALIA, ESSAYS, POEMS, LETTERS, etc., by COLERIDGE, about 86 pp. 4to. and 8vo., £10. 10s

The MARGINALIA include Notes written in a copy of TOM JONES, 2½ pp. 4to. On the MORALITY OF DANCING, 2 pp. 4to. On the DRAMATIC POEM OF HADAD, 3 pp. 4to. Various PRAYERS, etc.

The LETTERS include one to MRS. ADERS, with the POET'S EPITAPH and ideals about his tombstone, and another containing his POEM LOVE'S APPARITION, to which the transcriber has appended a note, 'S. T. Coleridge, ætatis suæ 63, *Fie! old gentleman.*'

702 — : LOWELL (Hon. James Russell) A.L.S., 2 pp. 8vo., Legation of the United States, London, May 12th, 1855, to MR. BARKER, respecting the COLLECTION of COLERIDGE'S MSS. described above, of which he writes, '*I found some of them exceedingly interesting,*' and identifying the BABY BATES with the family of MR. JOSHUA BATES, one time head of the house of Baring, whose daughter afterwards became the wife of M. VAN DER WEYER, the Belgian Minister, and a great friend of Queen Victoria, £2. 2s

703 — : MASSON (David) A.L.S., 3 pp. 8vo., Dec. 2nd, 1864 (*a little torn*), and 40 other Letters of the same date, to or from MR. BARKER, MR. ALEXANDER MACMILLAN, MRS. ADERS, Members of the COLERIDGE FAMILY, etc., dealing with the proposed publication of the Collection of Letters, Poems, etc., described in the present Catalogue, £3. 3s

See note at head as to the sale of this most interesting collection as a whole.

704 **DICKENS (Charles John Huffam)** A.L.S., 1 p. 8vo., Tavistock House, Feb. 9th, 1854, £3. 15s

'I have never heard of my intention to visit the Ordnance Map Office, nor do I hear of many of my intentions untill they come to me for my astonishment.'—etc.

705 — A.L.S., 1½ pp. 8vo., Gad's Hill Place, Oct. 7th, 1867, to his Son HENRY FIELDING DICKENS, an interesting Letter respecting his SECOND AMERICAN TOUR, etc., £17. 17s

'... I sail for America, from Liverpool on Saturday the 9th of November. My Cunard ship is the Cuba, and I have one of the officer's cabins on deck. I hope to return by the First Cunard ship in May. It will be a very fatiguing business, but I could not reconcile it to myself to neglect so promising a prospect of being handsomely remunerated for hard work. . . .

Your affectionate Father

(I can't write the word!)

Charles Dickens.'

706 **FIELDING (Sir John, blind Bow St. magistrate; half-brother of Henry Fielding)** L.S., 1 p. folio, Bow St., Feb. 10, 1779, to COMMISSIONER OURY, Plymouth Dock, respecting some Papers concealed at Plymouth, £1. 15s

707 **GEORGE IV. (King, as PRINCE REGENT)** A.L., *third person*, 1 p. 8vo., Brighton, Saturday, Nov. 19, 1814, evening 7 o'clock, to LORD BATHURST [Secretary of State for War]; marked '*Most private,*' and urging that Wellington should be sent to the United States to replace SIR GEORGE PREVOST, who had failed at PLATTSBURG in July of this year, £4. 4s

'Nothing should be neglected to induce the Duke of Wellington to accept of the Chief Command in America as soon as possible, as his name alone will reconcile the whole view & opinion of the Country, & at the same time be the means of obviating as well as removing many difficulties which may afterwards arise.'

Had the Regent's grand idea been carried out and the Duke sent out to burn a few more American cities it might have been quite awkward at Waterloo.

The blind Magistrate's signature.

AN INTERESTING 'ILLUSTRATED' LETTER:

708 **MAURIER (George du)** A.L.S., 4 pp. 8vo., Felden, Boxmoor, Sept. 21st, 1894, to '*Dear Harrison (we'll drop the Mr. if you don't mind—2 confrères),*' an amusing letter, with CARICATURE PORTRAITS of HIMSELF and WHISTLER on p. 4, and References to the Difference they had respecting 'TRILBY', £6. 15s

'... I often have the Paris nostalgia . . . You do not mention the great J. W.: he has dropped his proceedings against the Harpers and is satisfied (I hear) with all that has been done. I have not heard for certain whether he does not still hold the sword of Damocles over me—so I hardly like to write to him yet and make my *amende honorable*.'

AUTOGRAPH LETTERS :

- 710 MELVILLE** (Henry Dundas, first Viscount, *Secretary for War*, 1794-1801; *impeached*) OFFICIAL COPY OF LETTER, 6 pp. 4to., London, December 29, 1798, to the EARL OF MORNINGTON [MARQUESS WELLESLEY, Governor-General of India], marked '*Private*'; A LONG AND MOST INTERESTING LETTER RESPECTING NELSON'S VICTORY AT THE BATTLE OF THE NILE, NAPOLEON'S INVASION OF EGYPT, EUROPEAN POLITICS, THE IRISH REBELLION, etc., partly in cipher, with *interlinear transcription (a few words defective)*, £6. 10s

'I have wrote to you many occasional letters since the one I wrote to you in the month of June last; but few of them were sent, because from the total want of information for a long time, of what was passing in Egypt and the Levant, and afterwards from the rapid change which was produced in those quarters by Nelson's splendid victory, I was literally not in a situation to give to you any new idea beyond what I have detailed in my letter in the month of June; I have contented myself at present with barely alluding to Nelson's victory, and the state of affairs in the Mediterranean and Egypt, because I know from the steps that have been taken to convey information of those transactions directly to India, your Lordship and the Government in India are informed of them as soon as we are here. I have felt myself perfectly at ease with regard to what was going on in India amidst the arduous points on which I had every reason to believe you would be called upon to act, because from your own letters, particularly the one recently received of date 6th July, compared with what I had wrote to you in the month of June, when the scene first opened, I had the satisfaction to perceive that our ideas were so much in unison as to leave me no room to doubt that your conduct would be precisely what I could wish. I know not yet whether anything decisive has happened to Buonaparte and his army in Egypt, if there has you have heard it long before you can receive this. Our last authentic accounts were that he and his army were labouring under every species of difficulty, and recent reports, not however sufficiently authenticated, have reached us that he himself had been murdered at Cairo, and the remains of his army of course put into great dismay and confusion. This is all that at present I am in a situation to state to you with any authenticity, at the same time from every collateral circumstance entertaining the most sanguine hopes that he and his whole army must go to destruction. This feeling, however, has not and shall not relax my intention to give to you in India every aid of men and money that I possibly can, keeping always in view that you are or may be involved in hostilities and consequently in expense. If no French assistance arrives, which is not likely to arrive, I take it for granted that you will be enabled to shape your conduct with regard to Tippoo exactly as circumstances may dictate to your judgment and discretion.

'... As for our situation at home, it is every thing we could wish; we have followed the blow given in the Mediterranean by Lord Nelson, in the capture of Minorca, of which the accounts are received within these few days. The authentic accounts are not yet arrived; but we are in daily expectation of hearing of the recapture of Malta; and our success in the Mediterranean has emboldened Naples to take up arms against France in Italy; whether this circumstance, or indeed any other, will induce Austria and Russia to act upon their true interests by returning to a confederacy against France remains to be proved.

'Russia has shewn them a noble example. Laying aside all former jealousies and animosities she proffered her aid to the Ottoman Porte, when the French directed their attacks against Egypt; and amidst all the extraordinary events which the present times have exhibited to the world; it is not the least extraordinary to see a Russian fleet in the Levant. So however stands the fact

'... The most pressing subject now remaining is the situation of Ireland, all the attempts of France to invade it have been discomfited, either by the surrender of their troops when landed, or by the capture of their fleets and troops by the navy, without permitting them to land.'

- 711 NEPEAN** (Sir Evan, *Secretary of the Admiralty*) OFFICIAL COPY of the INSTRUCTIONS of the ADMIRALTY to REAR-ADMIRAL RAINIER, 7 pp. folio, June 18, 1798; A LONG AND MOST INTERESTING LETTER ON NAPOLEON'S PROJECTED INVASION OF INDIA, the possible means by which he would try to carry it out, and the steps to be taken to frustrate it; endorsed as having been received by the '*Albatross*', Capt. Adam, Sept. 3, 1798, at 8 A.M., £3. 3s

The writer starts by saying 'a considerable armament has lately been fitted out at Toulon, which sailed from thence on the 19th ult. under the command of GENERAL BUONAPARTE, and has been joined by a further force. It seems to be most probable that the real design of this armament is to take possession of Egypt, and afterwards to proceed on to form a Junction with the Troops of Tipoo Sultan, and attack our Settlements in India, either by the route of the Red Sea, or by the Gulph of Persia... the force to be employed... is reported to amount to no less than 80,000 men... Supposing it probable that the Landing may be effected before the Armament can be attacked... It is highly important that every practicable means should be adopted for obstructing its progress to India... A Squadron... has been ordered to proceed immediately to the Straits of Babelmandel for the purpose of destroying any Craft which may be intended to be employed by the Enemy in the Red Sea, and prevent him from passing the Strait. And as the same precautions are equally necessary for guarding the Gulph of Persia and preventing the Enemy's passing into India by that Route, My Lords conceive it to be essential that a Squadron should also be stationed there"—etc.

- 712 PIOZZI** (Hester Lynch, sometime MRS. THRALE, friend of Dr. Johnson) COLLECTION of AUTOGRAPH LETTERS, HOLOGRAPH WILL, etc., as under, 4to., new crimson polished Levant morocco, by RIVIERE, with specially printed title-page and portrait added, £36.

COMPRISING SEVEN LONG A.L.L.S. (4 with name, and 4 initials only), 24 pp. 4to., Brynballs, July 12th, 1797, to Nov. 9th 1799, to ROBERT RAY; HOLOGRAPH OBITUARY ACCOUNT of her SECOND HUSBAND GABRIEL PIOZZI, 1 p. 4to. (1800); Her Own Holograph Will, 2 pp. 4to., Sept. 4th, 1798, duly signed by herself and three Witnesses, J. JONES, ROBT. RAY, and LEONARD CHAFFETON; POEM (? Holograph) of 6 lines on her Two MARRIAGES:

'A maid gave her hand at the Altar to Thrale
For something she wanted,—perhaps it was ale—
She married a second, with wishes no fewer
Who wanted that something possessed by the Brewer.
This answer I give to the question you put
The one was entire, the other all But.'

The LETTERS are long, and full of that delightful gossip of which the writer was so fond; one, she herself describes as *a Letter as long as a Book, and interlined beside in Places, like the King's Speech*; a page of one of the others is headed '*Now for an Anecdote and Story*', followed by the reproduction of a long conversation between herself and Miss Thrale; the following extract is from the letter dated July 28rd, 1798:

'... You rejoice my heart by letting me see that Ocean is still our owu: and Gallant Nelson Britannia's first Lieutenant. May he but catch Buonaparte with his one hand, he shall find it too small to contain the Rewards his King and Country will present him with on his Return. That '*stroke alone will really quiet the Irish Rebels, of whom all you say is well known to be strictly true by us who live near, & who see their Emigrants perpetually.*' The best of them all was the fellow who when asked what he was fighting for... replied *Man cipation*. ... Do you know what *Emancipation* means Friend? enquired the Loyalist. I know he's an *honest Man* answer'd Paddy & that our Priest says so; and that I'll fight for him as long as I can stand—drunk or sober"—etc.

AUTOGRAPH LETTERS:

OF PERMANENT HISTORICAL AND SOCIAL VALUE:

- 713 **RUSSELL** (Lord John, M.P., first Earl Russell, *Prime Minister*), Catalogue of Autograph Letters and MS., by or relating to, and incidentally illustrating National Life and the Progress of Reform during the first three Quarters of the Nineteenth Century: SENT POST-FREE ON APPLICATION.

'There is a great difference in Whigs.'—*Anthony Trollope*.

This is especially noticeable in the above catalogue, the very full extracts in which, many from unpublished letters and papers, and copious explanatory notes, make it of permanent historical and social interest.

- 714 **SMITH** (Adam, author of '*The Wealth of Nations*') A.L.S., 2 pp. 4to., Custom House, Edinburgh, 10 Nov. 1784, to his bookseller, giving him a list of names for presentation copies, £3. 3s

- 715 **STEVENSON** (Robert Louis) A.L.S., in full, '*ROBERT LOUIS STEVENSON*,' 5 pp. 8vo., Bournemouth, Jan. 2nd, 1886, to JAMES PAYN, a long and very interesting Letter respecting the Locality and Characters in his STORY OF THE BROWN BOX, £31. 10s

'... The hospital was a point in my tale; but there is a house on each side. Now the true house is the one before the hospital; is that No. 11? If not, what do you complain of? If it is, how can I help what is true? Everything in the Dynaniter is not true; but the story of the Brown Box is, in almost every particular; I lay my hand on my heart and swear to it. It took place in that house in 1884, and if your daughter was in that house at the time, all I can say is she must have kept very bad company.'—etc.

THE WATT CENTENARY, 1819-1918:

- 716 **WATT** (James, engineer, and perfecter of the steam engine) SEVEN A.L.L.S., 10½ pp. 4to., Jan. 9, 1790, to Sep. 13, 1803, to DR. WILLIAM or MRS. WITHERING, on domestic matters, and a Chancery suit brought against him by Dr. Stokes; mentioning the name of Counsel who should be briefed, and that of his Partner MATTHEW BOULTON (*q. v. ante*), signature of one letter cut away, £12. 12s

- 717 **WELLINGTON** (F.-M. Arthur Wellesley, first Duke of) A.L.S. '*Wellington*,' 5 pp. 4to., Nov. 23, 1834, to the DUKE OF GORDON; A LONG AND MOST INTERESTING LETTER, marked '*Private and Confidential*,' describing in vigorous language the dramatic fall of LORD MELBOURNE'S GOVERNMENT, and WILLIAM THE FOURTH'S keen anxiety that WELLINGTON should form an ADMINISTRATION exclusively from amongst the King's friends, £4. 10s

'... The death of the late Earl Spencer which removed Lord Althorp from the House of Commons and from the management of the Government business in that Assembly and from the Office of Chancellor of the Exchequer occasioned the greatest difficulty and embarrassment. His personal influence and weight in the House of Commons was the main foundation of the strength of the late Government and upon his removal it was necessary for the King and his Ministers to consider whether fresh arrangements should be made to enable His Majesty's late Servants to conduct the affairs of the Country or whether it was advisable for His Majesty to adopt any other course. The arrangements in contemplation must have reference not only to Men but to Measures. The King felt the strongest objection to some of the latter... particularly to some relating to the Church of England in Ireland (*sic*). ... The King likewise might have been exposed to the necessity of taking into his Council men to whom neither H.M. nor the Public could give their confidence. Under these circumstances the King thought proper to send for me and desire me to form a Government for him. ... I earnestly recommended that H.M. should choose a Minister in the House of Commons and that Sir Robert Peel should be the Person. ... Sir Robert Peel has been sent for and may be expected in the end of the first week in December and at that period I conclude that he will form the arrangements necessary for the conduct of the Affairs of the Country.'

- 718 ——— L.S., 3 pp. 4to., Villa Fria, Oct. 21, 1812, to COMMODORE SIR HOME POPHAM, partly in cipher, with interlinear translation (CIPHER LETTERS of the great Commander are very rare), £12. 12s

'... The Enemy moved forward on the 15th and have since collected in our front in very large numbers. They advanced yesterday evening with three Divisions of Infantry, and a considerable body of Cavalry, probably with the object of reconnoitring the position which we occupy, but upon my moving down some Troops to attack them they retired in haste to the ground above Fresno. I am inclined to believe that the whole of the Troops of the Armies of Portugal and of the North which are disposable, have been collected for this operation; but they don't appear disposed to make any serious attack upon us. By the letters which I have received from the South, it seems evident that Soult is about to move on Madrid with the whole of the Troops in Valencia and Murcia and as the weather which has been so very bad in this part of the Country has not been so to the South the fords of the Tagus are unfortunately all practicable. I have besides learned that General Ballesteros who was ordered to take up a position at Alcaraz has not moved from Granada. Under these circumstances if I do not in the course of this evening receive any account from Sir R. Hill which should induce me to believe that the Enemy are not marching on the Tagus I propose to raise the siege of Burgos and withdraw across the Arlanzon. I shall not therefore want the guns which you were so kind as to send to Reynosa. ...'

This was written only a few hours before he raised the siege of Burgos and 'with a heavy heart' began a retreat towards the Douro.

- 719 **WILLIAM IV.** (King) D.S., 1 p. folio, Nov. 21, 1834, to LORD LYNTHURST [Lord Chancellor], countersigned by the DUKE OF WELLINGTON as Home Secretary, £1. 1s

On November 15th the King sent for Wellington, Melbourne's Ministry having fallen on the 12th, and he became not only First Lord of the Treasury but also Home, Foreign, and Colonial Secretary—an unparalleled and almost Gilbertian conglomeration.

- 720 **WHITMAN** (Walt) SAIL OUT FOR GOOD, EIDOLON YACHT [OF ME: these 2 words deleted] [a Poem], ORIGINAL HOLOGRAPH MS., 1 p. 4to., with several erasures and corrections, £15. 15s

'Heave the anchor short,
Raise main-sail and jib—steer forth,
O little white-hull'd sloop, now speed on really deep waters,
(I will not call it our concluding voyage,
But outset and sure entrance to the truest, best, maturest,) Depart—depart from solid earth—no more returning to these shores.
Now on for aye our infinite free venture wending,
Spurning all yet tried ports, seas, hawsers, gravitation, densities,
Sail out, for good, eidolon yacht of me.'

AUTOGRAPH LETTERS:

- 721 **YORK (Frederick Augustus, Duke of)** A.L.S. '*Frederick*,' 1½ pp. 4to., Brighthelmstone, Sept. 29, 1814 [to the MARQUESS WELLESLEY]; an interesting letter respecting the preparations for WAR with The UNITED STATES, £4. 4s

'I have this moment received your Lordships letter with the enclosures herewith returned from Vice Admiral Cochrane and lose no time in assuring you that I concur most fully with your views of the present state of the Question with America, and of the policy and even necessity of immediate and great exertion.

'I therefore cannot see the least hesitation in forwarding a second Regiment from this Country, in order to save the time which might be lost in touching at Cork for the 40 Regiments now under order for America, and send with this the order for the Fusiliers, which is at Portsmouth and that is the only Regiment at this moment in the country able to be completed to its full establishment'—etc.

A Catalogue of very valuable and important Original MSS. by BURNS, THACKERAY, HAWTHORNE, SWINBURNE, and others, will be sent post-free on application.

MEZZOTINT PORTRAITS

OF THE

EARLIER ENGLISH SCHOOL:

The following are all BRILLIANT IMPRESSIONS purchased by the original collector as they were published, and have been recently removed from a large folio volume in which they were bound up before 1790. As was usual in those days, before they were fastened into the book the top and side margins were in some cases either reduced or cut away, to prevent the prints from creasing, as the engraved surface had been stretched owing to the custom of damping the paper before it received the pressure of the engraved copperplate.

The references 'C. S.' are to Challoner Smith's British Mezzotint Portraits. Other Contractions are: W.L. = whole length; T.Q.L. = three quarters; H.L. = half length. The sizes of the engraved surfaces are given in inches.

- 722 **ANNE (Queen)** Nearly W.L., seated on a bank, holding string of pearls; with title, 'The Princess Ann'; by I. BECKETT, after W. WISSING (12 × 9½; C. S. 2), £3. 3s
- 723 **BAXTER (Richard)**; nonconformist divine, author of '*The Saint's Everlasting Rest*'; 1615-1691) Bust, in skull-cap, bands, and gown; decorated frame, by J. SPILSBURY [after J. RILEY] (12½ × 9½; C.S. 4), £3. 3s
- 724 **BERKELEY (Sir William, Admiral)**; fallen in sea-fight with the Dutch, 1639-1666) Nearly W.L., standing in cuirass, right hand on rock; with the title '*Sir William Bartley*,' by R. TOMPSON, after SIR PETER LELY (12½ × 9½; C.S. 5), £6. 6s
- 725 **BEVERLAND (Adrian)**; licentious writer, born at Middleburg in Zealand 1653, died in England 1712) Nearly W.L., drinking at table with his mistress, wig, lace cravat, loose robes, SCHENCKE fe. et. ex. (12 × 9½) (*frequently miscalled The Earl of Rochester*), £4. 10s
- 726 **BOYLE (Hon. Robert, F.R.S.)**; scientist and philosopher, 1627-1691) Marble Bust in a niche, by J. FABER, JNR. (12½ × 9½; C.S. 125), £2. 5s
- 727 **BROWNLOW (Dorothy Lady)**; wife of Sir William Brownlow, of Humby; when MADAM D. MASON) Nearly W.L., seated, plucking a rose, by JOHN SMITH, after W. WISSING (12½ × 9½; C.S. 179), FIRST STATE, £4. 4s
- 728 **BURNET (Thomas, pr., LL.D., Master of the Charterhouse)**; 1635?-1715) Nearly W.L., seated in armchair, in gown and bands, glove in right hand; from picture at the Charterhouse by J. FABER, JNR., after SIR GODFREY KNELLER (11½ × 9½; C.S. 51), £2. 2s
- 729 **CECIL (Hon. Charles)**; ? third son of John, fifth Earl of Exeter) A Child, seated on a bank, feeding a lamb, by B. LENS, after J. VANDER VAART (12½ × 9½; C.S. 1), £3. 3s
- 730 **CECIL (Hon. William)**; ? second son of John, fifth Earl of Exeter) A Boy, W.L., seated on a bank, pointing to a macaw, by JOHN SMITH, after W. WISSING (12½ × 9½; C.S. 38), FIRST STATE, before the address was altered, £7. 7s
- 731 **CHARLES I. (King)** W.L., kneeling before table, on which is open book, Crown of Glory above with rays proceeding towards his eye, robes, left hand holding crown of thorns, right hand to breast, right foot on globe, beside which lies crown, by J. SMITH, after SIR ANTHONY VAN DYCK (12½ × 9½; C.S. 44), £2. 10s
- 732 **CHARLES II. (King)** W.L., seated by table, in Garter robes, view of Windsor Castle seen through window; from the Duke of Richmond's picture, by J. FABER, JNR., after SIR PETER LELY (17 × 13½; C.S. 77), A SPLENDID IMPRESSION, £10. 10s
- 733 **CLAYTON (Sir Robert, of Marden Park; Alderman of London)**; Lord Mayor 1680; 1629-1707) H.L., in gown and chain, oval frame, with insignia of office below, by JOHN SMITH, after J. RILEY (15½ × 11½; C.S. 52) (*a somewhat late impression showing rust marks*), £1. 10s

MEZZOTINT PORTRAITS:

- 734 **CLEVELAND** (Barbara Villiers, Duchess of, wife of Roger Palmer, Earl of Castlemaine; a Mistress of Charles II.) In the character of MINERVA, nearly W.H., holding spear and shield, from the picture now at Hampton Court, No. 6 of the set of 'Beauties of Windsor,' by T. WATSON, after SIR PETER LELY (16 × 13 inches: C.S. 5), a beautiful impression, with margins, £12. 12s
- 735 **COMPTON** (Hon. Henry, D.D., 90th Bishop of London; sixth son of Spencer, second Earl of Northampton; 1632-1713) H.L., in rochet; oval, by J. BECKETT, after J. RILEY (11½ × 9½: C.S. 26), £1. 10s
- 736 **COOPER** (Elizabeth) A Child, W.L., seated, a black boy offering her fruit, by W. FAITHORNE, JNR., after SIR PETER LELY (12½ × 10: C.S. 7, 1.), FIRST STATE, £7. 7s
- 737 **COOPER** (Edward, printseller, mortuus ante 1725) H.L., holding rolled-up print, by P. PELHAM, after J. VANDER VAART (12½ × 10: C.S. 9), £2. 10s
- 738 **COUPLET** (Francis, S.J., Chinese missionary) W.L., standing, Chinese dress, holding Crucifix, table with books to right, by J. FABER, JNR., after SIR GODFREY KNELLER (17½ × 13½), £2. 16s
- 739 **CROMWELL** (Oliver, Lord Protector) H.L., in armour; oval, after R. WALKER (10½ × 8½), £4. 4s
- 740 **DALKEITH** (Henrietta Countess of; wife of the Earl of Dalkeith and mother of Francis, second Earl of Buccleuch, obit 1730) When LADY H. HYDE, with her sister MARY, afterwards LADY CONWAY; W.L., seated, holding a dove between them, by JOHN SMITH, after W. WISSING (13 × 11½: C.S. 138), inscription cut away, £3. 10s
- 741 **DELAMER** (Henry, Lord, afterwards EARL OF WARRINGTON, tried for complicity in the Duke of Monmouth's Rebellion, but acquitted; took a leading part in the Revolution of 1688) H.L., long dark wig, lace cravat, armour; oval, by J. SMITH, after SIR GODFREY KNELLER (11½ × 9½: C.S. 79), £3. 3s
- 742 **DORCHESTER** (Catherine Countess of; Mistress of James II.; 1657-1717) When MADAME SEDLEY; H.L., oval, by R. WILLIAMS, after W. WISSING (8½ × 6½: C.S. 52), £3. 10s
- 743 **DORSET and MIDDLESEX** (Elizabeth Bagot, Countess of; first Wife of the sixth Earl) When LADY FALMOUTH; nearly W.L., standing, from the picture at Hampton Court: one of the set of plates of the 'WINDSOR BEAUTIES'; with the erroneous title 'Amelia, Countess of Ossory,' by THOMAS WATSON, after SIR PETER LELY (16½ × 13: C.S. 5), £10. 10s
- 744 **DRUMMOND** (William, of Hawthornden; historian and poet; 1585-1649) H.L., standing, lace band; from the Earl of Home's picture, by J. FINLAYSON, after C. JOHNSON (13 × 10½: C.S. 5), £5. 5s
- 745 **EDWARD VI. (King)** W.L., standing, cap, robes, collar of the Garter, crown on table to right, landscape with church in distance through window, inscription space cut away (16½ × 11½: C.S. engraver not ascertained, 56), £2. 10s
- 746 **EXETER** (John Cecil, fifth Earl of; 1648 (?) - 1700) Nearly W.L., seated, hand on hip, by JOHN SMITH, after SIR GODFREY KNELLER (12½ × 9½: C.S. 87), FIRST STATE, £3. 3s
- 747 **FEILDING** (Robert, called 'BEAU'; bigamist; 1651 (?) - 1712) T.Q.L., standing, in wig and armour, right hand on a helmet, by I. BECKETT, after SIR GODFREY KNELLER (12½ × 9½: C.S. 35), second state, £7. 7s
- 748 **FENHOULET** (Ann, Lady, Wife of Sir Peter Fenhoulet) When MISS DAY; H.L., full face, in hat and mantle, hands in muff, by J. MCARDELL, after SIR JOSHUA REYNOLDS (10½ × 8½: C.S. 53), £9. 9s
- 749 **FINCH** (Lady Essex; third daughter and co-heir of Robert Rich, third Earl of Warwick, by Ann, daughter of Sir Thomas Cheeke of Pargo, married to Daniel, eldest son of Heneage Finch, first Earl of Nottingham; obit 1684) Hair in curls, low dress, scarf over shoulders, left elbow on table to right supported by figure of a boy, on which lies vase of flowers, by THOMPSON, exc.; after SIR PETER LELY (12½ × 9½: C.S. 3), £3. 3s
- 750 **GARRICK** (David) H.L., in the Character of KITELEY, own hair, edged collar, slashed coat, cloak over left shoulder, arm on balustrade, by J. FINLAYSON, after SIR JOSHUA REYNOLDS (13½ × 10½: C.S. 7), SECOND STATE, £12. 12s
- 751 **GEORGE I. (King)** H.L., long black wig, armour with sash across, ermine cloak over right shoulder, oval, by SMITH, after J. HIRSEMAN (12 × 9½: C.S. 99), £3. 3s
- 752 **GORDON** (Duchess of; wife of the second Duke, obit 1760) W.H., when LADY HENRIETTA MORDAUNT, young girl, hair in curls, necklace, right hand extended towards dog on left, landscape to left, by JAMES WATSON, after SIR PETER LELY (13½ × 11½: C.S. 105), £5. 5s
- 753 **GRAFTON** (Isabella Bennet, Duchess of; wife of the first Duke; daughter of Henry Bennet, Earl of Arlington, 1667-1723) W.L., standing holding shell in fountain: from picture at Hampton Court, by B. LENS, after SIR GODFREY KNELLER (a tiny piece cut off top corners), (15½ × 9½: C.S. 12), £2. 10s

MEZZOTINT PORTRAITS:

- 754 **GRAFTON** (Charles Fitzroy, second Duke of; *Lord Lieutenant of Ireland, 1683-1757*) When LORD EUSTON; a child, W.L., standing by a bank, holding up hand towards a macaw on tree, in cap feathers, by JOHN SMITH, after SIR GODFREY KNELLER (12½ × 10: C.S. 86), £2. 5s
- 755 **HAMPTON COURT BEAUTIES**: 'The BEAUTIES done from the ORIGINAL PICTURES in his MAJESTIES PALACE of HAMPTON COURT, by SR GODFREY KNELLER, Bart., late Principall Painter to his Majtie. Printed & Sold by Robt. Sayer. Near St. Dunstan's Church in Fleet Street & John King at the Globe in the Poultry. J. VANDERBANK Delin. J. FABER. fecit.' A SERIES of THIRTEEN large plates; comprising FRONTISPIECE, consisting of H.L. portrait of KNELLER, in oval frame, surrounded with two Cupids, Fame blowing her trumpet, and Palette with brushes, etc., on console under (18 × 12); and 12 FULL-LENGTH PORTRAITS of the LADIES mentioned below (each 17½ × 12: C.S. 28)
- | | |
|------------------------------------|-----------------------------------|
| Queen Mary II ; | Mary, Countess of Dorset ; |
| Isabella, Duchess of Grafton ; | Mary, Countess of Essex ; |
| Dodington, Duchess of Manchester ; | Carey, Countess of Peterborough ; |
| Sarah, Duchess of Marlborough ; | Margaret, Countess of Ranelagh ; |
| Diana, Duchess of St. Albans ; | Anne, Lady Midelton ; |
| Jane, Countess of Clarendon ; | Mrs. Scroop. |
- PRICE £31. 10s THE SET.
- 756 **HONDIUS** (Abraham ; *animal painter, 1638?-1691*) H.L., pointing to sketch which he holds, by JOHN SMITH, after HIMSELF (8½ × 7½ : C.S. 132), £1. 1s
- 757 **JONES** (Lady Elizabeth) Nearly W.L., sitting, long curl on right shoulder, holding flowers in lap, and taking blossom from orange-tree in vase, R. THOMPSON excudit, after SIR PETER LELY (12½ × 9½ : C.S. 23), FIRST STATE, before the 'Sr' to painter's name, £3. 3s
- 758 **JAMES I. (King)** ; H.L., own hair, short beard and moustache, ruff, jewelled George hung from neck by ribbon, oval, with rectangular corners, by J. SMITH, after SIR GODFREY KNELLER (11½ × 9½ : C.S. 139), £2. 5s
- 759 **JAMES II. (King)** W.L., standing, in ermine-lined mantle and armour, truncheon in left hand, by I. BECKETT, after SIR GODFREY KNELLER (15½ × 9½ : C.S. 50), £9. 9s
- 760 ——— H.L. long wig, lace cravat, robes, collar and George, oval, within rectangular borders (7 × 5½), 15s
- 761 **KILDARE** (Elizabeth Countess of; *wife of the eighteenth Earl, daughter of Richard Earl of Ranelagh, 1665-1758*) When LADY ELIZABETH JONES, nearly W.L., seated, plucking blossom from an orange tree, by R. THOMPSON, after SIR PETER LELY (12½ × 9½ : C.S. 23), £3. 3s
- 762 **LATIMER** (Hugh ; *72nd Bishop of Worcester*) H.L., in robes, oval, with rectangular borders, by R. HOUSTON (originally engraved by JOHN FABER, one of the set of the Reformers), (8½ × 7½ : C.S. 'Faber' 58), 10s
- 763 **LAUD** (William ; *76th Archbishop of Canterbury, judicially murdered 1645*) T.Q.L., standing in rochet, right arm on plinth of column; from picture now at Petrograd, by J. WATSON, after SIR ANTHONY VAN DYCK (14½ × 12: C.S. 90), £2. 2s
- 764 **LICHFIELD** (Charlotte [Fitzroy], Countess of; *Wife of Henry Lee, first Earl; daughter of Charles I. by the Duchess of Cleveland, 1664-1718*) W.L., standing, left arm on pedestal, spaniel at her feet, from picture at Ditchley, by I. BECKETT, after SIR GODFREY KNELLER (15½ × 9½ : C.S. 66), £3. 3s
- 765 **LOCKE** (John, F.R.S. ; *philosopher, 1632-1704*) H.L., with his own hair, oval frame, by JOHN SMITH, after SIR GODFREY KNELLER (12 × 9½ : C.S. 157), £7. 7s
- 766 **LOFTUS** (Madam; *identity uncertain*) Nearly W.L., seated, left arm on pedestal on which is oval relief of a cupid, by JOHN SMITH, after SIR GODFREY KNELLER (12½ × 9½ : C.S. 158), £3. 3s
- 767 **LONSDALE** (John Lowther, first Viscount; 1655-1700) When SIR JOHN LOWTHER, nearly W.L., seated, holding a paper, A. BROWNE exc., after SIR PETER LELY (13½ × 10½ : C.S. 21), £5. 10s
- 768 **LYTTELTON** of **MUNSLOW** (Edward Lyttelton, Baron; *Lord Keeper; 1589-1645*) When SIR E. LYTTELTON, T.Q.L., standing, in ruff and robes of Chief Justice, by R. WILLIAMS, after SIR ANTHONY VAN DYCK (12½ × 9½ : C.S. 33), FIRST STATE, £1. 10s
- 769 **MACCLESFIELD** (Anne Mason, Countess of; *wife of Charles Gerard, second Earl; reputed mother of Richard Savage the poet, married to (II.) Col. Henry Brett; 1668-1753*) When LADY BRANDON, nearly W.L., seated, by JOHN SMITH, after W. WISSING (12½ × 10: C.S. 22), £3. 10s
- 770 **MARLBOROUGH** (Henrietta Churchill, Duchess of: *suo jure; daughter of John, first Duke; wife of the second Earl of Godolphin, 1681-1732*) When the HON. HENRIETTA CHURCHILL, W.L., standing, holding basket and flower, her sister ANN (afterwards COUNTESS of SUNDERLAND) seated on bank beside her; with title 'THE LORD CHURCHILL'S TWO DAUGHTERS', by JOHN SMITH, after SIR GODFREY KNELLER (13½ × 10: C.S. 51, II.), £4. 10s
- 771 **MARY of MODENA** (Queen of James II.) H.L., hair in large curls, entwined with pearls, lace edging over robes, which are loose and low at breast, in oval, by I. BECKETT (5½ × 6½ : not in C.S.), £1. 10s

MEZZOTINT PORTRAITS:

- 772 **MARY** Queen of Scots; oval, in frame embellished with thistles and fleur-de-lys, and intertwined with laurel wreaths, hair dressed full at sides, with black cloth over as a hood, necklace and ruff of white fur, close black flowered dress with trimming of white fur in centre and under arms, frame supported on an entablature having in centre a shield surmounted by a crown, and inscription in Latin, by J. SIMON ($13\frac{1}{2} \times 10$: C. S. 98), £3. 10s
- 773 **MAZARIN** (Duchess of), and Count COLBERT, in the characters of VERTUMNUS and POMONA, T.Q.L., sitting, pearls in hair, curls falling behind shoulders, very loose dress, left hand across bosom, right elbow on balustrade towards left, on which are sculptured figures, and behind which stand Colbert as an old woman, statue of Venus and Cupid in background, by JAMES WATSON, after GASPARD NETSCHER ($17\frac{1}{2} \times 13\frac{1}{2}$: C. S. 100), £8. 8s
- 774 **MELFORT** (John Drummond, first Earl and titular Duke of; *Jacobite*; 1649-1714) H.L., in wig and gown, oval, by I. BECKETT, after SIR GODFREY KNELLER ($8\frac{1}{2} \times 7$: C. S. 73), £1. 15s
- 775 **MIDDLETON** (Jane, born NEEDHAM; *Court beauty*, 1645-92) T.Q.L., standing, holding basket of fruit, with incorrect title 'LADY MIDDLETON'; from the picture now at Hampton Court by J. MCARDELL, after SIR PETER LELY ($16\frac{1}{2} \times 13$: C. S. 129), A BEAUTIFUL IMPRESSION, £12. 12s
- 776 **MILTON** (John, poet; 1608-1674) H.L., long hair, chaplet on head, collar and tassels, cloak, oval, with square borders, by J. SIMON, after R. WHITE ($11\frac{1}{2} \times 9\frac{1}{2}$: C. S. 104), FIRST STATE, £6. 6s
- 777 **MONMOUTH** and **BUCCLEUCH** (Ann Scott, Duchess of; *suo jure Countess of Buccleuch, wife of the Duke of Monmouth; married to Charles, third Baron Cornwallis*; 1651-1732) H.L., with pearl necklace and pearls on dress, oval, with engraved borders, by J. VANDER VAART, after SIR GODFREY KNELLER ($13\frac{1}{2} \times 10$: C. S. 5), £2. 12s 6d
- 778 ——— W.L., seated on dais, her two sons, the EARL of DONCASTER and LORD HARRY [afterwards EARL of DELORAIN], standing on either side of her, by [JOHN SMITH], G. BECKETT exc.; after SIR GODFREY KNELLER ($15\frac{1}{2} \times 10$: C. S. 182), SECOND STATE, £6. 6s
- 779 ——— H.L., veil falling from head, oval, by R. WILLIAMS, after W. WISSING ($8\frac{1}{2} \times 7$: C. S. 37), £1. 5s
- 780 **MONTAGU** (Elizabeth Wriothesley, Countess of, first Wife of Ralph, first Earl and Duke of; daughter of the fourth Earl of Southampton; married (I) Joceline Percy, eleventh Earl of Northumberland, 1646-1690) When COUNTESS of NORTHUMBERLAND, nearly W.L., seated, right arm on plinth of column, by I. BECKETT, after SIR PETER LELY ($12\frac{1}{2} \times 9\frac{1}{2}$: C. S. 78), £4. 4s
- 781 **NATSCHEER** (Caspas; artist) T.Q.L., seated, loose robe, left elbow resting on table, palette in right hand ($11 \times 9\frac{1}{2}$), £2. 2s
- 782 **NEWTON** (Sir Isaac) Bust in a Niche, with rounded top, done from the marble in Her Majesty's Hermitage in the Royal Garden at Richmond, by J. FABER, JNR.; one of the set of the Philosophers of England ($12\frac{1}{2} \times 9\frac{1}{2}$: C. S. 125), £3. 10s
- 783 **PETTY** (Sir William, M.D., F.R.S.; physician, mechanic, and political economist; Surveyor-General of Ireland; 1623-87) H.L., in oval, by JOHN SMITH, after J. CLOSTERMAN ($11\frac{1}{2} \times 9\frac{1}{2}$: C. S. 201), FIRST STATE, before all letters, £5. 10s
- 784 **PLYMOUTH** (Charles Earl of; son of Charles II. by Mrs. Catherine Pegg; patron of Otway, died at the relief of Tangier, Oct. 1690, aged 23) T.Q.L., long wig, lace cravat, scarf across right shoulder, right elbow on pedestal, left hand on hip, landscape seen through window in background, by JOHN SMITH, (?) after SIR PETER LELY ($11\frac{1}{2} \times 9\frac{1}{2}$: C. S. 202), inscription space slightly damaged, £4. 10s
- 785 **PORTLAND** (Frances Stuart, Countess of; Wife of Jerome Weston, second Earl; youngest daughter of the third Duke of Lennox) T.Q.L., standing, holding flowers in left hand, and plucking others with right, A. BROWNE excudit, after SIR ANTHONY VAN DYCK ($13\frac{1}{2} \times 10$: C. S. 29), £6. 6s
- 786 **REMBRANDT**, when young, velvet cap, hair full, gorget with chain across, cloak over right shoulder, by C. TOWNLEY, after HIMSELF ($13\frac{1}{2} \times 11\frac{1}{2}$: C. S. 22), a beautiful impression, £8. 10s
The picture is No. 235 of Smith's Catalogue, the cap is not however decked, as there stated, with feathers.
- 787 **RICHARDS** (William; rector of Helmdon, Northants; Nonjuror; author of 'Wallography: or the Briton described') W.L., in long dress, left hand resting on a ledge, by JOHN SMITH, after SIR GODFREY KNELLER ($8\frac{1}{2} \times 7\frac{1}{2}$: C. S. 211), 8s
- 788 **RICHMOND** (James Stuart, Duke of; Royalist; 1612-55) When DUKE of LENNOX, W.L., standing, in lace collar and cloak with star, greyhound beside him, from Lord Methuen's picture by R. EARLOM, after SIR A. VAN DYCK ($18\frac{1}{2} \times 13\frac{1}{2}$: C. S. 36), £5. 5s
- 789 **ROCHESTER** (Henrietta Boyle, Countess of; Wife of the first Earl) Nearly W.L., leaning against pedestal, and plucking a flower; from picture now at Hampton Court; No. II of the set of 'Beauties of Windsor', by T. WATSON, after SIR PETER LELY, A MOST BEAUTIFUL IMPRESSION (16×13 : C. S. 5), £10. 10s
- 790 **ROMNEY** (Henry Sidney, Earl of; brother of Algernon Sidney; 1641-1704) When the HON. H. SIDNEY; a boy, W.L., with a dog, spear over shoulder, by A. BROWNE, after SIR PETER LELY ($14 \times 10\frac{1}{2}$: C. S. 35), £4. 10s

MEZZOTINT PORTRAITS:

- 791 **SANDWICH** (Elizabeth Countess of; *Wife of Edward Montagu, third Earl; daughter of the second Earl of Rochester; obit, 1757*) When LADY ELIZABETH WILMOT; nearly W.L., seated on bank, holding crook, and feeding a sheep, by JOHN SMITH, after W. WISSING and J. VANDER VAART (12½ × 9½: C. S. 277), £3. 10s
- 792 **SMITH** (Erasmus, Son of Sir Roger Smith, of Edmondthorp, Leicestershire) H.L., full wig, lace cravat, loose gown—**MADAM SMITH**, his wife, hair in curls, lock falling across right shoulder, loose dress—PAIR, ovals, with rectangular borders, by G. WHITE, the latter print after SIR GODFREY KNELLER (11½ × 9½: C. S. 43), £4. 10s
Born about 1610; inherited the estates of his mother, Anna, daughter of Thomas Goodman of London, Esq., second wife of Sir Roger Smith; had engaged in the Turkey trade, and was an alderman of London: acquired large estates in Ireland about the early part of King William's reign, and founded and endowed a number of schools in that country, which are still in existence; purchased Weald Hall, in Essex.
- 793 **SOMERSET** (Charles Seymour, sixth Duke of, K.G.; '*the Proud Duke*'; 1662-1748) W.H., in wig and gown, left arm on block, J. SIMON, after SIR GODFREY KNELLER (12½ × 10: C. S. 136), £2. 10s
- 794 **SOUTHAMPTON** (Rachel de Ruigny, Countess of, first Wife of the fourth Earl; 1603-40) W.L., seated on clouds, hand on globe; from picture now belonging to Lord Lucas, by A. MCARDILL, after SIR ANTHONY VAN DYCK (18½ × 13½: C. S. 168), A MAGNIFICENT IMPRESSION, £8. 10s
- 795 **SPRAT** (Thomas, D.D., F.R.S.; 86th Bishop of Rochester, and Dean of Windsor; author; 1635-1713) Nearly W.L., seated at table, with his son THOMAS, ARCHDEACON of ROCHESTER, who holds a large open book; from picture in Bodleian Library, by JOHN SMITH, after M. DAHL (11½ × 14½: C. S. 243), £2. 2s
- 796 **STUART** (Prince James) W.L., a child, lying on a cushion, ermine robe round him, on wall behind at top coronet and P. within wreath, curtain to right, by JOHN SMITH, after SIR GODFREY KNELLER (13½ × 10: C. S. 246), £3. 3s
- 797 **SUTTON** (Thomas; coalowner, founder of the Charterhouse; 1532-1611) W.L., seated in armchair by table, on which rests a plan; from picture in the Charterhouse by J. FABER, JNR. (18½ × 13½: C. S. 341), £4. 4s
- 798 **THOMPSON** (Richard) H.L., long hair, twisted neckcloth, dark robe; oval, by F. PLACE, after G. ZOUST (8½ × 7½), 18s
- 799 **TONSON** (Jacob; bookseller; 1656 (?) - 1736) T.Q.L., seated in armchair, holding vol. of '*Paradise Lost*'; from picture now at Bayfordbury; No. 43 of set of Kitcat Club, by J. FABER, JNR., after SIR GODFREY KNELLER, in brown ink (12½ × 10: C. S. 208), £1. 10s
- 800 **VANDYKE** (Sir Anthony; painter) In the Character of ICARUS: T.Q.L., a youth, shoulders undraped, Dædalus on left fastening on his wings, by JOHN WATTS, after himself (17½ × 14: C. S. 6), open letter proof, MAGNIFICENT IMPRESSION, £3. 10s
- 801 **VERNEY** (William; son of Sir Greville Verney; 1668-83) W.L., seated on a bank, in wig and Roman dress, fondling a hound, R. THOMPSON excudit after SIR PETER LELY (12½ × 10: C. S. 48), £4. 10s
- 802 **WHARTON** (Anne Lee, Lady; first Wife of the first Marquess; poetess; 1632 (?) - 1685) Nearly W.L., seated on a bank, pointing with right hand, with incorrect title '*Marchioness of Wharton*', by R. EARLOM, after SIR PETER LELY (14½ × 11½: C. S. 42), £5. 5s
- 803 **WHARTON** (Lady Philadelphia, born Carey; Wife of Sir Thomas Wharton; daughter of Robert, first Earl of Monmouth; obit 1654) Nearly W.H., seated, holding flowers in lap, by R. DUNKARTON, after SIR ANTHONY VAN DYCK (15½ × 12: C. S. 40), £4. 10s
- 804 **WILLIAM III.** (King, when Prince of Orange) H.L., in armour, and sash; oval, by I. BECKETT (8½ × 7½: C. S. 82), £1. 10s
- 805 **WOOTTON** (John; artist, pupil of John Wyck, painter of racehorses at Newmarket) H.L., long curls, lace collar; oval, with rectangular corners, by J. FABER, after SIR GODFREY KNELLER (11½ × 9½, not in C. S.), £4. 10s

ENGRAVED VIEWS OF LONDON AND MIDDLESEX:

- 806 **BAGNIGGE WELLS**: A BAGNIGGE WELLS SCENE: or No Resisting Temptation, mezzotint, in the manner of J. R. SMITH (13 × 10); slightly damaged by folding), £4. 4s
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Carrington Bowles [1772]
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Carrington Bowles [c. 1772]
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ENGRAVED VIEWS OF LONDON:

- 809 **BUCKINGHAM HOUSE**: VIEW of BUCKINGHAM HOUSE [now BUCKINGHAM PALACE] in ST. JAMES'S PARK, taken from the side of the CANAL, near Rosamond's Pond; *showing the house among the trees, with water, costume figures, etc. in foreground*; LINE-ENGRAVING ($8\frac{1}{2} \times 15$), £1. 5s J. Tinney, 1752
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'Carlisle House, Soho Square, was tenanted by the notorious Mrs. Cornelys from 1763 to 1778, and here she gave a succession of balls and masquerades which for a time were exceedingly fashionable. The house was pulled down at the beginning of the present century (1803 or 1804) and two houses built upon its site.'—Wheatley. La Cornelys eventually went bankrupt, became a huckstress of asses' milk, and died in the Fleet Prison.
- 811 **CARLTON HOUSE** [in PALL MALL]: VIEW of the GARDENS, etc., *showing the beautifully laid-out gardens, with ornamental buildings, statuettes, etc.; gardeners at work*; LINE-ENGRAVING, by and after W. WOOLLETT, FINE IMPRESSIONS IN GOOD CONDITION ($13\frac{1}{2} \times 20$), £5. 5s c. 1760
- 812 **COVENT GARDEN**:—VUE PERSPECTIVE DU MARCHÉ AUX FLEURS À LONDRES: *quaint COLOURED LINE-ENGRAVING, showing market houses and stalls, with numerous figures, and St. PAUL'S CHURCH on right* (9×16), 18s c. 1760
- 813 —: A WONDERFUL THING FROM PARIS—or, MADAME SACCHI gratifying John Bull's curiosity at COVENT GARDEN THEATRE, April, 1816; *showing the interior of the theatre with the lady walking a tight rope; a highly COLOURED CARICATURE* (13×9), £1. 10s Sidebotham, [c. 1816]
- 814 —: AMOROUS, CLAMOROUS, UPROARIOUS, and GLORIOUS; all coming from a Public Dinner; *a humorous COLOURED AQUATINT, by GEORGE HUNT, after T. LANE, representing a party of ladies and gentlemen, somewhat overcome by wine, coming to blows with the Watch outside Covent Garden Theatre* ($9\frac{1}{2} \times 12$), 15s c. 1830
- 815 **CRIES of LONDON**: LAST DYING SPEECH and CONFESSION; *a street ballad singer, of the St. Giles's order, is crying the last speech of 'the unfortunate malefactors who were executed this morning'; that the fear of capital punishment did not act as a corrective to theft, is illustrated in the background of the print, where an infant is seen picking the pocket of a passing pedestrian*; COLOURED AQUATINT, *within borders*, by MERKE, after ROWLANDSON (being No. 3 of the set of 8 *Cries of London*), (Grego, v. 1, p. 354) ($20\frac{1}{2} \times 13\frac{1}{2}$), £2. 2s Ackermann, 1799
- 816 **FISHMONGERS' HALL**: view from London Bridge, including part of the new bridge, with numerous figures and vehicles, mostly representing various trades; LARGE LITHOGRAPH, by DAY and HAGHE ($15\frac{1}{2} \times 23\frac{1}{2}$), 15s [c. 1840]
- 817 **EGYPTIAN HALL, PICCADILLY**:—LAPLANDERS, REINDEER, ETC. as EXHIBITED at the EGYPTIAN HALL in 1822; *bordered with illustrations of the curiosities of Lapland, with keynote at foot of print: The Laplanders' Return to their Native Country under the Care of Mr. Bullock and his Son, with a border composed of Curiosities not known in Lapland; a VERY QUAIN and interesting PAIR of COLOURED AQUATINTS, drawn and etched by I. R. CRUIK-SHANK* ($13\frac{1}{2} \times 17\frac{1}{2}$), £3. 3s G. Humphrey, 1822
- 818 **FOUNDLING HOSPITAL**, View of the: *showing the Hospital and grounds, numerous figures, vehicles, etc. in foreground; hilly landscape in background*; LINE-ENGRAVING, by PARR after L. P. BOITARD ($9\frac{1}{2} \times 15\frac{1}{2}$), 15s R. Sayer, 1723
- 819 **FROST FAIR**: VIEW of the THAMES off THREE CRANES WHARF WHEN FROZEN, Monday, 31st January to 5th February, 1814, on which a FAIR was held, attended by many hundred persons; *showing Old London Bridge and the Monument, with encampments, booth, figures, etc. on the ice; very fine COLOURED AQUATINT; without margins* (15×20), £3. 3s Burkitt and Hudson, 1814
- 820 **GROSVENOR SQUARE**: ORIGINAL WATER COLOUR DRAWING, by J. C. NATTES, taken from the garden in the middle of the square, near the equestrian Portrait of George I. [since removed], with group of ladies and children playing, one of the houses (No. 19) seen through the trees; A BEAUTIFULLY FINISHED DRAWING (15×10) in contemporary gold frame, £34. [c. 1790]
'His method of colouring causes his drawings to be ranked among the earliest examples of water-colour painting in this country.'—D. N. B.
- 821 **HAMMERSMITH SUSPENSION BRIDGE**: view of the River Thames at Hammersmith, with sailing craft, figures, etc., in foreground; COLOURED AQUATINT, by J. BAILY, after W. WESTALL ($7 \times 10\frac{1}{2}$), £2. 2s Ackermann, 1828
- 822 **HAMPTON COURT**: THE ROYAL PALACE OF HAMPTON COURT: *an expansive view, showing ornamental gardens and fountains, with numerous figures in foreground*; LINE ENGRAVING by NATH. PARR, after I. RIGAUD (9×16), 9s T. Bowles [c. 1760]
- 823 —: VIEW of the ROYAL PALACE OF HAMPTON COURT; *fine view, showing part of the Palace and grounds, with numerous costume figures*; COLOURED LINE-ENGRAVING ($9\frac{1}{2} \times 15\frac{1}{2}$), 17s 6d H. Parker, 1763
- 824 **HANWORTH CHURCH**: exterior view of the church and its grave-yard; COLOURED AQUA-TINT, *within engraved borders*, by G. J. PARKYNS, after I. C. BARROW ($10\frac{1}{2} \times 13\frac{1}{2}$), 15s 1793

ENGRAVED VIEWS OF LONDON:

- 825 **HOLBORN VIADUCT**:—A BIRD'S EYE VIEW of a PROPOSED VIADUCT from ST. SEPULCHRE'S CHURCH to HATTON GARDEN: *lithograph*, by R. K. THOMAS (17 × 14), 10s 6d [c. 1850]
The cruelties of Holborn Hill continued for nearly twenty years after the date of the above plate.
- 826 **JAMES'S (ST.) PARK** from **NEW BUCKINGHAM HOUSE**, a pretty view showing the top of the Mall, the Canal, with cattle standing in the water, the Horse Guards in the distance, the towers of the Abbey above the trees on the right,—**VIEW of the GREEN PARK, PICCADILLY**, From the N.E. corner, shewing the fountain and large reservoir (which was filled up in 1856), a PAIR of BEAUTIFULLY COLOURED AQUATINTS, in contemporary mahogany frames (13 × 18), very rare, £22. 10s
R. Taylor, 66 Whitechapel, April, 1826
- 827 **LEICESTER SQUARE**, early view of the famous square, shewing the enclosed space with the equestrian statue of George I. in centre, houses all around, figures, vehicles, etc., in foreground; COLOURED LINE-ENGRAVING, by and after T. Bowles (9½ × 15½), £1. 1s [c. 1770]
- 828 **LIMEHOUSE**, TYPICAL RIVERSIDE SCENE at; with its Shipping and numerous Wharves, the barge-building premises of Messrs. Surridge and Hartnoll in foreground; clever ETCHING by C. W. SHERBORN (5½ × 12½), £1. 10s [c. 1874]
- 829 **LONDON (PORT OF)**: PERSPECTIVE SKETCH illustrating a DESIGN submitted to the consideration of the Select Committee of the House of Commons on the IMPROVEMENT of the PORT of LONDON; extensive view of part of the London Docks and the great expanse of country beyond, illustrating a design for two bridges with lock and drawbridge, which has never been carried out; FINE COLOURED AQUATINT, by WM. DANIELL, after GEORGE DANCE: A VERY INTERESTING PRINT (with a tear neatly mended) (12½ × 24½), £3. 10s 1800
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- 832 **OLD LONDON BRIDGE**, and Vicinity; shewing the old bridge with its many spans; a number of sailing barges and other vessels with numerous figures in foreground; LINE-ENGRAVING, by EDW. GOODALL, after J. M. W. TURNER (7 × 10½), 7s 6d 1827
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- 836 **STAINES BRIDGE**: view of the River Thames at Staines, shewing the old bridge (no longer in existence), boats, figures, etc.; FINELY COLOURED AQUATINT, by C. BENTLEY, after W. WESTALL (7 × 10½), £2. 2s Ackermann, 1828
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- 838 **TWICKENHAM**: VIEW of POPE'S VILLA, shewing the famous residence on the banks of the Thames within a background of foliage, the river and near bank in foreground; FINELY COLOURED AQUATINT, by C. BENTLEY, after W. WESTALL (7 × 10½), £2. 2s Ackermann, 1828
- 839 ———: **ST. MARGARET'S**: fine view of a residence surrounded by trees on the bank of the River Thames (in foreground), boats, figures, etc.; FINELY COLOURED AQUATINT, by C. BENTLEY, after W. WESTALL (7 × 10½), £2. 2s Ackermann, 1828
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- 841 **WHITTON**: VIEW of the HOUSE and PART of the GARDEN—The CANAL and GOTHIC TOWER in the GARDEN; interesting views, both containing costume figures, and the latter having in foreground an ornamental lake with several people fishing and promenading on its banks; PAIR of LINE-ENGRAVINGS, by and after W. WOOLLETT; CLEAN IMPRESSIONS (13 × 20), £4. 10s
Sayers and Bowers, etc., c. 1760

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Ackermann, 1828
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[c. 1790]

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